



The Letter of the Collège de France

3

N°3 Academic Year 2007-2008



COLLÈGE
DE FRANCE
—1530—





Teaching research in the making

The Collège de France was created in 1530 by François I

The Collège's motto is « **Docet omnia** »: the vocation to teach everything

The lectures are open to anyone, there are no registration fees, no diplomas are awarded

The program is changed each year



Dissemination of knowledge

- More than 100,000 people attend each year lectures and seminars, foreign guests conferences, international and interdisciplinary symposia

- The Collège publishes: inaugural lectures (published by Fayard), symposia held at the start of the academic year and conferences given by guest professors (published by Odile Jacob), a yearbook (abstracts of lectures and research studies), the Letter of the Collège de France, DVDs

- Podcasts, audio and video broadcasts on the web site (www.college-de-france.fr)

- Lectures are broadcast on radio station France Culture



56 chairs

52 existing chairs + 4 chairs whose holder changes every year (International, European, Artistic Creation and Technological Innovation - Liliane Bettencourt)

Promote the emergence of new disciplines

Multidisciplinary approach to high-level research

Every time a professor is appointed, a new chair is created in any scholarly domain:

- Mathematics
- Physics and chemistry
- Biology and medicine
- Philosophy, sociology, economics
- Archaeology, history
- Study of the great civilizations
- Linguistics and literature
- Artistic creation
- Technological innovation



International relations

Invitations to foreign scholars

- European chair and international chair

- 50 foreign lecturers invited per year

Teaching chairs abroad

- Belgium: Free University of Brussels (and other universities of the French community in Belgium) (2007)

- Brazil: University of Sao Paulo / Institute of Advanced Studies (Lévi-Strauss Chair) (2002), Forum of the Universities of Rio de Janeiro (Celso Furtado Chair) (2004)

- Canada: Universities of Quebec (CRÉPUQ) (2003)

- Czech Republic: Charles University of Prague (2008)

- China: City University of Hong Kong (2007)

- Germany: University of Bonn (Ernst Robert Curtius Chair) (2008)

- Israel: Hebrew University of Jerusalem / Institute of Advanced Studies (2007)

- Italy: National Research Council (CNR) (2004)

- Lebanon: Saint Joseph University of Beirut (2006)

- Singapore: A*STAR - Agency for Science, Technology and Research (2005)

- Spain: Botin Foundation Chair (2004)

- Sweden: University of Uppsala (and other Swedish universities) (2004)

- Switzerland: University of Lausanne – Federal Polytechnic School of Lausanne (2008)

- USA: University of Chicago (2006)



Research at the Collège de France and training through research

More than 320 researchers

226 engineers, technicians and administrative staff

140 trainees, PhD students, post-doctoral students, foreign contributors



The Collège de France libraries

A collection of rare books and specialist libraries that are among the best in Europe

Can be accessed by outside specialists

General library

Library of social Anthropology

Library of the Orientalist Institutes: Egyptology, ancient Near East, Byzantium, Arabic, Turkish and Islamic Studies, Far East (India, Tibet, China, Korea, Japan)



“What the Collège de France is expected to bring to its audiences is not established knowledge, but the idea of free research.”

(Ce que le Collège de France, depuis sa fondation, est chargé de donner à ses auditeurs, ce ne sont pas des vérités acquises, c'est l'idée d'une recherche libre.)

Maurice Merleau-Ponty

Editorial

by Pierre Corvol
Administrator
of the Collège de France
Professor,
holder of the Chair of
Experimental Medicine



For the Administrator of the Collège de France to be reviewing the year's activities once again may seem rather pointless: what is a single year in the life of an institution whose history dates back to 1530? It is nevertheless interesting to compare our objectives with the Collège's undertakings and achievements over the past year.

One of our priorities was to broaden the dissemination of the Collège's lectures and conferences via modern means of communication. By doing this we hoped to extend the institution's outreach, at the same time as upholding the principles of free and open access to our teaching. On-line downloading of the fifteen lectures available on the Collège de France website far exceeded our expectations in 2007: one million times in six to eight months. This clearly attests to a sustained interest in knowledge and research by a far larger public than the typically Parisian audiences who frequent the Collège's amphitheatres – even though a growing proportion of our lectures are delivered outside the capital, in France and abroad. This is an encouragement to intensify our efforts to spread knowledge even further, by increasing the number of lectures that can be consulted on-line or downloaded, and by video-recording lectures.

Expanding the Collège de France's openness towards society, the academic world and the international community is another objective. This year Professor Mathias Fink will hold the annual Chair of Technological Innovation – Liliane Bettencourt, created in 2006 to study the application of science in society, and devoted to bio-technologies in 2006 and computer technology in 2007. Professor Fink, whose work has contributed substantially to the development of new medical therapies, home automation and submarine acoustics, will give a lecture series titled “Waves and images”. In the 2008-2009

academic year two of the annual Chairs will become thematic Chairs, for a period of four to five years. The International Chair will be devoted to the theme “Knowledge Against Poverty”. The underlying idea is the following: to be efficient, a science actively applied on the ground to combat poverty must be based on structured knowledge, implying the communication and comparison of knowledge in widely diverse fields. To a large extent, this type of science still has to be developed. In 2008-2009 this Chair will be occupied by Professor Esther Duflo, who will deliver a lecture on “Poverty and Development in the World”. The theme of the European Chair will be “Sustainable Development – Environment, Energy and Society”. It will be occupied by Professor Henri Leridon, whose lecture series will be titled “Demography, End of the Transition”.

On an exploratory basis, the Collège de France wanted to enable PhD students to follow the lectures of Collège de France professors as part of their university curriculum. A simple agreement with several doctoral schools has enabled about thirty students to follow the lectures of the Liliane Bettencourt Chair of Technological Innovation, and those of the scientific and philosophical Chairs. This collaboration between the Collège de France and universities is enriching for all concerned, especially the students, and the plan is to increase it over the next few years.

As regards international outreach, the Collège de France has signed new teaching agreements with the University of Bonn (Germany), the Free University of Brussels, Francophone universities in Belgium, the City University of Hong Kong (China), the Hebrew University of Jerusalem (Israel), the University and the Ecole Polytechnique Fédérale of Lausanne (Switzerland), and Charles University in Prague (Czech Republic).

Finally, part of the Collège de France's buildings are still undergoing renovation, but some of the construction work will be completed by the end of 2008, in particular the general library. Once the reorganization of the chemistry and biology sections is complete it will be possible to set up laboratories for several Chairs and to host new young research teams. We also look forward to the reopening of the cafeteria, a convivial space for all.

These accomplishments are the fruit of a remarkable collective effort. The mobilization and responsiveness of all concerned – lecturers as well as administrative and technical staff – have been flawless. The Collège's streamlined governance, which enables it to react swiftly to problems as soon as they arise and to take the necessary decisions, has facilitated the implementation of these initiatives.

As the Collège de France's ambitious policy requires substantial financial resources, the Ministry of Higher Education and Research has provided valuable support enabling us to continue our work. However, as noted in 2006, we cannot expect the state to provide everything and therefore have to find other sources of funding, mainly through the development of research partnerships and sponsorships. In this respect the Collège has already received substantial financial aid, notably from the Bettencourt-Schueller Foundation, Mr Michel David-Weill and Sanofi-Aventis. The institution nevertheless remains entirely free to determine its own strategies and orientation, and to appoint its professors in the disciplines and fields that it defines without any outside intervention.

Finally, the Administrator is responsible for ensuring that the institution functions in the service of all, by finding the required resources

and appropriate staff to meet the objectives defined by the institution. It was primarily to this end that the Foundation of the Collège de France was created in June 2007. The goal of this state-approved body is to develop and further teaching, research, training and the dissemination of knowledge in France and abroad. It has been designed to adequately meet the financial needs of research projects, the Chairs and the laboratories, and thus to promote top-level research oriented towards society. ■

Professor Pierre Corvol

Administrator of the Collège de France

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SELECTED
PAPERS

CLOSING LECTURE

Michael Edwards, holder of the Chair of *Literary Creation in English* from 2002 to 2008



Professor Edwards gave his final lecture on 3rd April 2008.

A video of the lecture is available at www.college-de-france.fr, on Prof Edwards's web page

A Lesson in Openness

On being elected to the Collège de France, I wanted my chair to be the first ever Chair of English, created at a time when an impoverished Anglo-American poses a threat to other languages, as to the English of English speakers, and furnishes another motive for looking closely at literature, as the revelation and ceaseless development of a language's natural resources. I wanted it, above all, to be a chair of poetics, in succession to those of Paul Valéry and Yves Bonnefoy: the opportunity for studying the philosophy of literary creation from the inside, as a writer. Since I had many things to comprehend and to communicate, I decided to deliver each year, not a single lecture series accompanied by seminars, but two series of lectures.

My teaching was founded on a long-held conviction that the understanding of literature progresses through a continual to-and-fro between basic research and the observation of a profusion of details, between the pursuit of fundamental laws and a living and untiring attention to those small things of which Proust writes that "each is a world". We cannot be content either with the kind of literary theory which functions as an autonomous discipline incapable of illuminating individual

works, or with analyses which, failing to ask the deepest questions, are of no help in examining the nature of poetry, narrative, theatre. "Literary theory" and "literary criticism" being inadequate terms, I am tempted to substitute literary "speculation", so as to bring together general consideration of the field, spying (one of the meanings of *speculatio* in low Latin), by which one infiltrates the work and the creative acts which produced it, and the idea of the essay as the mirror (*speculum*) of the work, a process of reflection which reflects it. I take it to be desirable to draw together, as far as is possible, thought *about* literature and the special thinking that occurs *in* literature: a thinking full of sensation and emotion, the involving of the whole person, body and mind and more, in a situation which evolves, a knowledge in search of itself which slowly takes form, an experience *invented* (discovered, imagined) and shaped by language. It is better also to listen to literature than to read it. We read it with our expectations, our interpretative grids, our "reading strategies", and so stifle the voice of the work, its singularity and its life, whereas in listening to it we put into play the Latin and Germanic etymologies of the word (actually two words) *sense*, which dispose one to

think (unscientifically but truly) that the meaning of a work is perceived in part by the dynamics of the body, and that, far from being an idea depriving the work of movement, it follows the direction that the work indicates.

One of the questions posed by the lectures concerned the finality of the literary work, the *work* that it accomplishes. A lecture course on "Shakespeare and Tragedy", for example, aimed to show that his tragedies explore a contradiction between the splendour of life and the disaster of death – which is not a notion appearing suddenly at the end of the Renaissance or a characteristic of baroque theatre, but which stands at the core of our condition – while reaching beyond it through a new experience of being, painfully won and in no way softening the terror and pity of a sick world. In a course on "Molière and Comedy" (which followed from the course on Shakespeare's comedies that I had given in 2000-2001 while holding the European Chair), a new way of listening to his theatre showed the centrality and existential depth of farce and of the *comédie-ballet*, discerned in the "serious" comedies, not sombre drama and pitiless satire, but the comic and moving search for a new self-



knowledge and for the conversion of the whole being, and revealed above all the creation of a generous and liberating laughter that glimpses the fullness of a world beyond evil and death. Another course on “Shakespeare: the Poet in the Theatre” traced a poetics of theatre as a dream, a simulacrum, a fiction which is embodied in facts (actors, costumes, sets) themselves fictive, and which constitutes a place and a time where everything changes and may continue to change. It also offered a poetics of the poet-dramatist who relinquishes his hold on lyric for a multi-personal poetry, by venturing into the consciousness and the language of others, so as to redefine the experience of being at the level of literary creation. In these lectures, as in all the others, the study of innumerable acts of writing underlined the presence of what I call *anaktisis* (as distinct from *mimesis*), the re-creation of the world and the self through a language equally re-created with a view to both attaining and transforming what is.

Another question (already taken up in a course of lectures on “Racine and Shakespeare” during my tenure of the European Chair) concerned the specificity of English poetry and of French poetry, and what one learns, by examining them together, as to poetry’s essential intent. A course on “The Genius of English Poetry” identified certain characteristics: a large confidence in the body of the real which leads to a

celebration of the apparently trivial and the eccentric and to a linking of the transcendent and the ordinary; a heterogeneity of perspectives and of tones within the same poem; an unceasing tradition of major long poems and of translations performing perfectly as English poems – all of which characteristics would seem to derive from the consonantal, strongly accented and above all pragmatic and hybrid nature of the English language. A series on “French Poetry and the Search for Being”, which observed the genius of French poetry in this central perspective, noted, among other things and despite numerous exceptions, a studied play among objects, sensations and abstractions, within a simultaneous experience of the sensible and the intelligible in which the latter is nevertheless privileged, and an organization of the poem which recalls the orderly way whereby the syntax of French organizes the sentence. The lectures were interrupted for two weeks so that other poets, Yves Bonnefoy and François Cheng, could speak to the subject from their point of view.

It was also a particular pleasure to draw attention to a number of generally neglected works where the two literatures meet or cross over: medieval bilingual poems, Mandeville’s *Travels*, written originally in Anglo-Norman, French poems of Gower, English poems of Charles d’Orléans.

A third question regarded explicitly the relations between literature and life. “Questions of Poetics” investigated, with this in mind, evil, pleasure, memory, imagination, change, illusion and, intra-muros, the connections between poetry and theatre, poetry and narrative. Two other lecture series went beyond literature so as to include

philosophy, painting and music. “Of Wonder” evaluated the role of literature, art and thought in the awakening of this salutary act of consciousness, while suggesting another line of enquiry: the difference between intransitive knowledge and transitive *knowing*. “The Happiness of Being Here” explored their role in the experience of *here*, of *now*, and opened up another topic for reflection in the future, the fractured but maybe reconcilable relations, within the *tôwb*, of the good, the beautiful, the true and the real.

My impression is that I have been at the Collège de France for a good while, a first lecture in 1986 having been followed by constant participation in annual conferences organized by Yves Bonnefoy. As with all of us, I greatly appreciate the unique character of the Collège, which is run so as to facilitate our work (the Collège lives in the discoveries and publications of its professors), and which attracts stimulating and attentive audiences – in my case, poets, novelists, translators, theatre people, writers of all kinds and artists in several disciplines, beside specialists in various literatures, students and research students, and the large, cultivated and enquiring public of which France can be proud. Not forgetting the agreement with France Culture, which enables us, by broadcasting our lectures, to address an even more extensive public. It is perhaps mainly by the spoken word to which our research is expected to lead in the first instance that the Collège de France encourages us to think differently, to look for a wisdom beyond knowledge, and to recognize the resistance of what transcends us, the fragility of our ideas and the exuberance of the possible. ■



CHAIR OF HUMAN PALEONTOLOGY



Michel BRUNET

gave his inaugural lecture on 27 March 2008. His course entitled 'Early hominids: a new story in the light of the most recent discoveries' began on 2 April 2008.

Extract from his inaugural lecture:

Member of the
*Institut
international de
paléoprimatologie
et paléontologie
humaine,*
(University of
Poitiers)

"[...] From the end of XIXth century until the beginning of XXth century, numerous human fossil remains were successively discovered, first in Europe (Neandertals, Cro-Magnons [...]), then in Asia (Homo erectus : Pithecanthropus from Java and Sinanthropus from China). But this quest for our Ancestor had to be a successful one and so, Eoanthropus dawsoni described in 1912, the Man of Piltdown from early Pleistocene in Sussex (Southern England) seemed to be our ideal Ancestor in the context of the time: an European, an Englishman, with a skull very similar to ours. But, 40 years later this discovery was revealed to be a hoax. The skull proved to be, thanks to the mass spectrometry technology, the combination of a modern human cranium with a living orang- outhan lower jaw (*Le Gros Clark* 1953)!



Later in South Africa, as early as 1924, took place the amazing discovery of the Taung Child, *Australopithecus africanus* Dart, 1925 (ca. 2.5 My) and in 1959 the discovery in Tanzania, East Africa, of *Paranthropus* (=Zinjanthropus) boisei (L. Leakey). Then numerous new discoveries took place between 2 and 3.6 My, first, at 2.5 My, *Paranthropus aethiopicus* (Arambourg & Coppens, 1968), then the most famous one with Lucy (3.2 My, in Afar, Ethiopia) by the French-US team headed by Y. Coppens, M. Taïeb & D. Johanson (*Australopithecus afarensis* Johanson & al. 1978). Little by little the scientific community became aware of the fact that our story was rooted not only in space, Africa in this case, but also deeply in time.

This singular geographic distribution of the prehumans (South and East Africa) linked to the fact that this earliest hominids were known only in East Africa (3.6 My at Laetoli in Tanzania) led Yves Coppens to suggest a paleoscenario he called "East Side story", the hypothesis of a bipedal prehuman origin in East African primary savanna.

This paleoscenario will definitely replace in 1982-1983 the hypothesis of an Asiatic origin, when David Pilbeam, Harvard University, demonstrated that *Ramapithecus* (known between 7-12 My in Siwaliks of Pakistan), the alleged earliest human Ancestor, was in fact a female *Sivapithecus*, genus related to the living Pongo, the Orang-utan.

From 1994 on African discoveries took place at high speed [...]

The new western story

In 1994 I founded and headed the M.P.F.T. (French Chadian Paleoanthropological Programme) which [...] is doing geological and paleontological surveys in the Djurab desert, Northern Chad, that is west of the Rift Valley. The MPFT successively unearthed a new *Australopithecine*



Re-creation of Toumai's bust

Australopithecus bahrelghazali, nicknamed Abel (3.58 My), the first ever found west of the African Rift and later a new hominid (nicknamed Toumai) *Sahelanthropus tchadensis* (Brunet et al., 2002), (late Miocene, 7 My).

The discovery of this new earliest known Hominid is a major event which definitely proves that the hypothesis of a southern or eastern origin of the Human clade must be reconsidered.

Sahelanthropus tchadensis displays a unique combination of primitive and derived anatomic characters which clearly shows that it can't belong to the gorilla or chimp lineages, but to the contrary a close relationship with the human clade. Its geological datation is probably very close to the last common ancestor of chimp and human. In the Late Miocene of Chad, the sedimentologic and paleobiologic data testify of a mosaic landscape. In today's central Kalahari desert, the Okavango delta in Botswana seems to be a good analogy for a similar mosaic landscape with rivers, lakes, swamps, woodlands, forest islets, wooded savannas, grasslands and desertic patches. In this mosaic, the studies of Toumai's ecologic preferences are still under progress. The dental enamel's Carbon (13C) stable isotope study should give more precise indications on its diet. Toumai, like others Late Miocene Hominids, was most probably living in woodlands. Moreover from what is known about their skull and limb bones, these three Late Miocene hominids are certainly bipeds. The original savanna hypothesis for biped and human origin is now part of the history of our story.

[...] Before *Homo* and *Australopithecus*, the Late Miocene Hominids (*Ardipithecus*, *Orrorin* & *Sahelanthropus*) form a new evolutive grade which is, for the moment the earliest known of our story. This situation could be compared to the scientific impact created by the description of the first *Australopithecus* by Dart in 1925 [...].

But if the human origin seems to be African, my M.P.F.T. team and I showed that the early Hominids did not live only in South and East Africa but also in a

larger area that includes at least Central Africa with Chad, and also probably Sudan, Libya and Egypt.

In this large saharian area we pointed out for the first time, in Chad, the evidence of a succession of humid and dry (even desertic) periods, at least during the last 7 millions years (7My) and also the fact that at the Late Miocene, Chad and Libya belonged to the same paleobiogeographic zone. This vast sahelian area has probably played an up to now unrecognized role, in the hominids's story. [...] This is now the heart of my research project.

It will also be essential to study the importance of climates and to describe with a modelisation approach their role on the Hominid evolution.

It seems to me quite predictable that one of the major stakes to a better understanding of our story will be to specify the paleobiogeographic relationships, not only within Saharian Africa but also with Eurasia, East and South Africa. At this moment the vast Saharian territory seems to be an immense empty area where only Chad has started to reveal data. If adding to this area first Eurasia and then the rest of the world will open incomparable, exciting new fields of work..." ■

This inaugural lecture is available shortly from Editions Fayard and on DVD (coproduction Collège de France/ CNED/Doriane Films).

CHAIR OF TECHNOLOGICAL INNOVATION - LILIANE BETTENCOURT 2007-2008



Gérard BERRY

gave his inaugural lecture on 17 January 2008

His course entitled 'Why and how the world is becoming digital' began on 25 January 2008.

Computer scientist,
Scientific Director
of Esterel
Technologies

Extract from the inaugural lecture:

"[...] Although the term 'digital world' is heard everywhere, the public knows little about what actually lies behind it. People always seem to be surprised by technical innovations and their attendant social changes. Yet, at least from a technical point of view, current trends were largely foreseeable and there is no reason to be surprised by the predictable. The public's constant surprise is rather the sign of an inappropriate mindset – which stands to reason since synthetic information is still poor here, in this field that lacks sound bases taught in the classical way. The aim of this inaugural lecture is to help to construct an appropriate mindset, that is, a common sense in computer science and technology, by explaining why the world is becoming digital, how the attendant changes are taking place, and which concepts and tools they use.



All the changes associated with digitization are based on four pillars. The first is the idea of representing and manipulating all information, irrespective of its nature, in the same way, thus departing from the age-old identification between a type of information and its physical medium. The second pillar is the extraordinary advances made in electronic circuits, software and transmission systems. This technological progress has made it possible to build increasingly powerful computers at a constantly reduced cost, and to connect them up on a very large scale. The third

pillar is the upsurge of the new information sciences – informatics, signal processing, automation, etc. – successfully applied to more and more fields. Finally, the last pillar is the richness of applications, itself owing to an exceptional level of technological and industrial innovation, found only in major industrial revolutions.

Everyone is aware of the speed with which computer technology is developing, and of its impact. This is obvious from the Internet: the putting on line of billions of documents scrutinized by search engines, world forums, encyclopaedias published by readers, interactive aerial maps and photos, generalization of distance administration, free telephony which is rapidly supplanting the 'old' commuted telephone, massive downloading of music and films, and so on. But there are many other equally essential fields as well: smartcards, cell phones, GPS, increasing automation of transport and its security, radical changes in medicine owing to modern imagery, computer-aided design of complex objects and processes in all fields, reduced energy consumption through more expert operation of engines, the detection of all sorts of dangerous situations, etc., and, in a very different domain, new forms of artistic creation. These new applications not only make life easier, they profoundly change our ways of doing things. To take just one example: with GPS and interactive world maps we simultaneously have all the scales on the same map; we can easily associate photos and maps, magically remain at the centre of the map while moving about, and jump from one place to another simply by tapping or clicking on their names. All this is obviously impossible with traditional paper maps. We can also obtain a traffic report in real time, which opens the prospect of a global management of traffic in cities. [...]" ■

This inaugural lecture is available from Editions Fayard. The video can be downloaded from the Collège de France website.

CHAIR OF WRITINGS AND CULTURES IN MODERN EUROPE



Roger CHARTIER

gave his inaugural lecture on 11 October 2007. His course entitled 'Circulation of texts and cultural practices in modern Europe (16th – 18th century) *Cardenio*' began on 25 October 2007.

Extract from the inaugural lecture:
'Écouter les morts avec les yeux'
'Escuchar a los muertos con los ojos'
(‘Listen to the dead with your eyes’)

Research Director
at the *École des
Hautes Etudes en
Sciences Sociales*
since 1984;
Gobert Prize of the
Académie Française
(1992)

“This verse by Quevedo comes to mind as I inaugurate a series of lectures devoted to the role of writing in European cultures from the end of the Middle Ages to the present. For the first time in the Collège de France’s history, a Chair is devoted to the study of writing practices, not in ancient or medieval worlds, but in the long period of modernity whose disintegration we may currently be witnessing.

This is probably an urgent undertaking at a time when writing practices are undergoing profound alterations. The media of writing, its reproduction techniques and its dissemination are all being transformed by changes in today’s world.

By severing the former ties between texts and objects, between discourses and their materiality, the digital revolution has required a radical revision of the acts and concepts that we associate with writing. [...] The electronic book, unlike its predecessors the scroll and the codex, is no longer distinguished from other written products by the evidence of its material form. Reading on a screen is discontinuous, segmented, attached to the fragment rather than to the whole. Is it therefore not the direct heir of practices stemming from the codex, which invites the reader to skim texts, based on their index or, as Montaigne put it, in ‘leaps and bounds’. Yet [...] the discontinuity and fragmentation of the reading does not have the same meaning when it is accompanied by the perception of the textual totality incorporated into the written object, as opposed to the situation where the luminous surface on which

fragments of writing can be read no long makes visible the limits and coherence of the corpus from which they are drawn.

How can we maintain the concept of literary property, defined since the eighteenth century on the basis of a perpetuated identity of works, recognizable irrespective of the form of their publication, in a world where texts are mobile, malleable and open, and where everyone, as they start, can “follow on, continue the sentence, fit into the interstices without anyone noticing” – as Michel Foucault wanted. How can we recognize an order of discourses that was always an order of books or, in other words, an order of writing closely associating the authority of knowledge and the form of publication, when today’s technical possibilities allow for the uncontrolled, instantaneous and universal circulation not only of opinions and knowledge, but also of errors and falsifications? How can we preserve ways of reading that construct meaning from the coexistence of texts in the same object (book, review, journal), whereas the new mode of conservation and transmission of writings imposes on reading an analytical and encyclopaedic logic where each text has no context other than the fact of falling under the same heading?

Today the dream of the universal library seems closer to realization than ever before. The digital conversion of existing collections promises the creation of a library without walls, where all the works ever published, all the writings constituting the heritage of humanity, might be accessible. This is a wonderful ambition and, as Borges wrote, ‘when it was proclaimed that the Library contained all the books, the first reaction was extravagant joy’. But the second reaction may be questions on the implications of this violence to which texts are subjected when they are no longer offered to readers in the same forms as in the past. [...] The ‘extravagant joy’ triggered by a universal library could become an impotent bitterness if it resulted in the relegation or, worse still, the destruction of the printed objects that through the ages have nourished the thoughts and dreams of those who read them. [...]” ■



This inaugural lecture is available from Editions Fayard and on DVD (coproduction Collège de France/ CNED/ Doriane Films).

EUROPEAN CHAIR 2007-2008



Professor of Semitic studies and Islamology at Johannes Gutenberg University of Mainz (Germany).

Manfred KROPP

gave his inaugural lecture on 15 November 2007. His course entitled 'The Koran as a linguistic and historical document: sources and methods for its study' began on 22 November 2007.

Extract from his inaugural lecture:

"My study of Arabic epigraphic pre-Islamic documents [...] led me to examine some of the oldest fragments and manuscripts of the Koran, available in facsimiles or in public libraries. I had just studied an inscription about a pre-Islamic Arabian king, and automatically used the same approach for a verse from the Koran. What does this mean? First, in a moment of grace – or heresy? – I disregarded everything derived from the Muslim tradition, in the ancient document: diacritical marks, vowels, punctuation. In short, I wanted to base my reading of the text on its skeleton of naked, ambiguous consonants, as if it were an ancient inscription. It's not easy to cheat with one's own memory and one tends to fall into familiar footsteps. The epigraphist's well-oiled mental mechanisms quickly prevailed; they produced doubts. I won't say results, yet. These first attempts were stimulated by the extraordinary development of Koranic studies in the past two decades. In the West, Islamic studies stemming from theological and especially Biblical studies were emancipated in the late eighteenth and early nineteenth centuries, to become an independent discipline, especially in the sector of Koranic studies. They are still paying a high price for that today, for they have incorporated a fair number of Islamic dogmas and have accepted various historical and other assertions. It is as if Christian scholars armed with the knife of historico-critical study, and after having bravely sacrificed the entire Bible – both Old and New Testaments – on the altar of historical knowledge, had lost their courage and left all the official dogma surrounding the Koran intact.



This inaugural lecture is available from Editions Fayard and on DVD (coproduction Collège de France/ CNED/ Doriane Films).

One of the surprising facts about Islamic studies is the absence of an historico-critical edition of the Koran. An undertaking of this nature was in fact started in the first half of the nineteenth century, in liaison with critical studies of Biblical texts and ancient literature, but several major projects failed. The twentieth century finally left us the Cairo quasi-canonical edition, which is used as the basis for scientific work on the Koran. This is comparable to Biblical studies using Saint Jerome's vulgate or the *Vetus Latina* as the founding text.

The last two decades of the twentieth century produced epigraphic evidence for source texts in Arabic, from the pre-Islamic era until the beginnings of Islam. Coherent and plausible interpretations of such texts demand a rigorous method. They imply the need to consider the context and the parallels, and to make comparisons with other Semitic languages and with similar texts attested to in them.

If someone with such an 'epigraphic' approach examined the first manuscripts of Koranic texts, they would inevitably question the accuracy of quasi-canonical interpretations. The epigraphist will naturally be tempted to read these *Hijazi* or *Coufique* manuscripts critically, to obtain a coherent and plausible interpretation.

At this point the representative of a positive and secular science could give in to temptation. Starting with problematical words or passages, they could analyse the text as if they were deciphering and interpreting ancient Arabic inscriptions. If their interpretations revealed distinct regularities, it would be feasible for them to formulate hypotheses on the spelling, grammar and semantic rules of the Koranic language.

In any case, an historico-critical edition of the Koran should be founded on the oldest manuscripts, and report and comment on all attested, plausible and conjectural interpretations. [...]" ■

INTERNATIONAL CHAIR 2007-2008



Pierre MAGISTRETTI

Professor of neuroscience at the *École Polytechnique Fédérale de Lausanne* and at the University of Lausanne.

gave his inaugural lecture on 14 February 2008. His course entitled ‘Glial cells, neuroenergetics and neuropsychiatric diseases’ began on 11 March 2008.

Extract from his inaugural lecture:
“Three terms are linked in the title of my lecture: neuroenergetics, synapses, and images. By way of introduction, these terms warrant some clarification. I will then explore the nature of their relationship, which has de facto been the main theme of my laboratory’s research for over twenty-five years.

First, neuroenergetics. This is a recent term, derived from bioenergetics. It relates to the molecular and cellular mechanisms of the production and consumption of energy, which are directly linked to neuronal activity. Neuroenergetics could be defined as all the energy processes involved in the nervous system’s processing of information, in the broad sense of the term.



Second, synapses. As this term has almost become a household word, it needs little explanation. It denotes the specialized part of the neurones through which information is transferred. Considering that the brain contains some 100 billion neurones, and that each neurone receives about 10,000 synaptic contacts, we obtain the impressive figure of 10^{15} synapses, The word synapse was introduced at the end of the nineteenth century by British neurophysiologist Charles Sherrington, who also prepared the ground for the study of neuroenergetics.

Finally, images. These can be considered from two angles: the images produced by functional brain imaging techniques; and the mental images resulting from neuronal

activity and the brain’s capacity to represent reality.

Now that we have briefly clarified these terms, consider the relationship between them. What is it that links neuroenergetics, synapses and images? To answer this question let’s go back to Sherrington and an article co-authored with Roy, which he published in 1890 in one of the first issues of the venerable *Journal of Physiology*. The article, entitled ‘On the regulation of the blood supply of the brain’, described a series of experiments on animals, which showed that blood flow increases specifically in the somatosensory cortex, the cerebral region in which tactile information is treated, when the animal’s paw was stroked, for example. Based on these observations, the authors reached the conclusion that ‘the brain has an intrinsic system in which the blood flow can vary locally in relation to local variations in the animal’s functional activity’. This was the first formulation of a basic principle of neurophysiology, ie the existence of mechanisms coupling the activity of neurones, thus the synapses, to the local blood flow, thus the supply of energy. As in the case of muscles, the increase in the blood flow related to muscular work locally increases the availability of energy substrates in the form of glucose and oxygen. Likewise, activated neurones ‘work’ and consume more energy. Given that such imaging techniques as functional Magnetic Resonance Imaging (MRI) or Positron Emission Tomography (PET) detect most changes in blood flow and consumption of glucose or oxygen related to neuronal activity, we can start to identify the links between neuroenergetics, synapses and images...” ■

This inaugural lecture is available from Editions Fayard. The video can be downloaded from the Collège de France website.

CHAIR OF MORPHOGENETIC PROCESSES



Alain PROCHIANTZ

gave his inaugural lecture on 4 October 2007. His course entitled 'Morphogènes et Morphogénèse' began on 22 October 2007.

Extract from the inaugural lecture:
"In 1984, in the laboratory headed by Jacques Glowinski, we observed that the shape and polarity of brain neurons cultured at the contact of non-neuronal cell, astrocytes, vary according to the respective topological origins of the two cell types. We could have focused our research on the latter astrocyte heterogeneity, a novel idea at the time. But I had been primarily intrigued by the link between shape and position revealed by our observation. Attending, as many, the lectures of François Jacob, I was aware of the existence of mutations associating genetic algorithms to positions and positions to organ shapes. In such mutants, embryonic cells misinterpret their position and, consequently, engage inappropriate morphogenetic programs. In the fly, legs develop instead of antennae or wings instead of eyes, for example.

Three years later, including one spent in New York, I decided to study the role of homeogenes in the coding of neural geometry. These genes encode transcription factors, called homeoproteins, that all bind DNA through a small peptidic structure: the homeodomain. To test the role of homeoproteins in neuronal morphogenesis, we decided to inject a homeodomain into nerve cells to displace endogenous homeoproteins from their cognate binding sites. A change of shape occurred, supporting our hypothesis. But, in a control, we observed that the same changes were also induced by the addition of the homeodomain outside the neurons. Instead of concluding to an artifact, having tagged the homeodomain, we could, much to our surprise, visualize its internalization and spreading throughout the cytoplasm and nucleus of live cells. Soon, the experiment was reproduced with full-length homeoproteins...

The concept, derived from these initial experiments, is simple. Two cells trading

transcription factors of this family exchange, so doing, positional information, and respond to this information by the expression of distinct effectors of morphogenesis. Therefore, homeoproteins are not only transcription factors that act within the nucleus, but also authentic morphogens, messenger proteins capable of gaining access to the extra-cellular milieu and to penetrate in abutting cells, thus influencing many of their characters, including their shape. This idea was strongly at odd with several dogmas.

A first dogma was that transcription factors work inside the nucleus, they do not escape cells, nor are they internalized by cells. They are not equipped for that. A second one was the well known membrane impermeability to hydrophilic agents. The idea that physiological mechanisms may exist, that destabilize the membranes to the point of making them permeable to high molecular weight proteins was inconceivable. Finally, homeoproteins regulate the shape of organs, not cell shape. And our observation implied that the same genes, therefore probably similar mechanisms, may control morphogenesis at the cellular and multi-cellular levels.

These objections are long gone. We have, the groups of Alain Joliot and mine, demonstrated that these factors are secreted and internalized and we have identified the sequences and, in part, the mechanisms involved. To the point that the field of vector peptides capable of traveling across biological membranes – a field opened in collaboration with the group of Gérard Chassaing – is today flourishing. In parallel, the myth of the impermeable membrane has lost its strength and no one is shocked, anymore, by membrane instability. Finally, who still remembers that cell shape regulation by homeoproteins was once debated?

In contrast, the idea that a transcription factor might be a morphogen, or more generally, an intercellular signaling molecule, can still, at time, encounter some resistance. Let us be clear: even if the work is far from being achieved, the participation of this mode of communication to crucial developmental periods is a solid hypothesis, based on hard experimental facts. [...]" ■

Member of the Academy of Sciences, Chairman of the *Neuropôle francilien* and of the Scientific Council of the *Fondation pour la recherche médicale*



This inaugural lecture is available from Editions Fayard. The video can be downloaded from the Collège de France website.

EPIGRAPHY AND HISTORY OF THE ANCIENT GREEK CITIES



Professor Denis Knoepfler

Bust of Emperor Hadrian,
117-138 AD
(Musée du Louvre).One of the inscriptions from
Coronea (Thebes Museum,
photo by Y. Kalliontzis).

An example of land settlement in Greco-Roman Antiquity: A collection of inscriptions from Coronea, Boeotia

In a series of lectures given last year on the ancient cities located around Lake Copais – “Pausanias Periegetes in Boiotia”, third part –, Professor Denis Knoepfler presented a series of inscriptions, remarkable both by their number and their contents : they consist of over ten letters in Greek from Emperor Hadrian (117-138 AD) and his first two successors engraved on half a dozen of large marble slabs. One of these blocks has been known since the end of the 19th century, but the others, found around 1920, remained unpublished and were (re)discovered only at the beginning of the 1970s. The first edition, rather mediocre, was not published until 1981. Professor Knoepfler therefore resumed the study of this dossier in close collaboration with one of his assistants, Thierry Châtelain, who defended last autumn a thesis entitled *Ancient Greeks and Wetlands: Perception and Exploitation of Paludal Environments*. Several letters – most of them sent to the people of Coronea – deal with works to be conducted to protect pieces of land located on the south-western bank of Lake Copais. These documents offer a major source for the history of the countryside in general, and particularly for the history of agriculture. They also throw a new light on the purposes and on the implementation of Imperial policy regarding provincial agriculture. Some results of current research are presented below, starting with the earliest letter of the series, in which Hadrian informs the Coroneans about decisions he made following their request:

To Good Fortune. Imperator Caesar Trajan Hadrian Augustus, son of deified Trajan Parthicus, pontifex maximus, tribunician power for the ninth time, thrice consul, to the archons, council, and demos of the Coroneans, greetings.

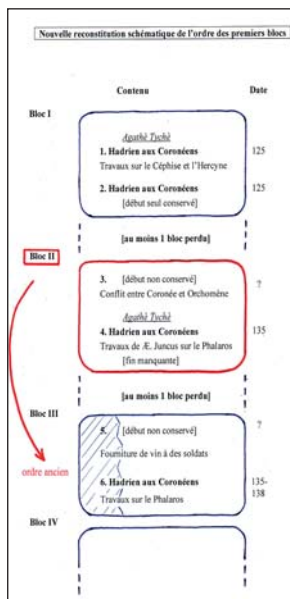
I ordered dikes to be made for the Cephisus and the Hercynne and the other rivers along the section where they now flow together before emptying into the

Copaic Lake. Construction shall occur as soon as possible so that they flow along their banks and be not diverted from their course nor, as now happens, flood most of the cultivable land. I shall construct an aqueduct for you too. The money will be given by me, 65,000 (denarii), which the experts in such matters say will be necessary. You are to elect the men who will be in charge⁽¹⁾.

The Imperial title suggests a date in 125 AD. Hadrian was staying in Greece that year : he spent the winter in Athens and travelled, among others, to Delphi. Although his itinerary is not known precisely, it seems certain that the Emperor, in order to reach the sanctuary, took the road following the south bank of Lake Copais and went through Coronea. This visit was a unique opportunity for the people of Coronea to inform the Emperor of the difficulties their city was encountering. Letters no. 1 and 2 (block I) show how quickly Hadrian responded to their expectations. But the enterprise was complex: ten years later, another letter (no. 4 according to the new sequence, implying the inversion of blocks II and III of the original publication) reveals that the works were still taking place on another river, the Phalaros, close to the big sanctuary of Athena Itonia according to Pausanias (IX 34. 5). Below (or next to?) the slab bearing this letter of the year 135 must be placed another block, broken at left (referred to as block III from now on). It contains the beginning of a very important letter (no. 6), apparently dating to the same year (by all means before 138 AD since it emanates from Hadrian), mentioning works to be carried out on the river Phalaros.

In order to understand the purpose of the intervention of the Emperor, one should bear in mind that nowadays the largest part of the plain of the Copais is cultivated because it was drained in 1930s after several fruitless

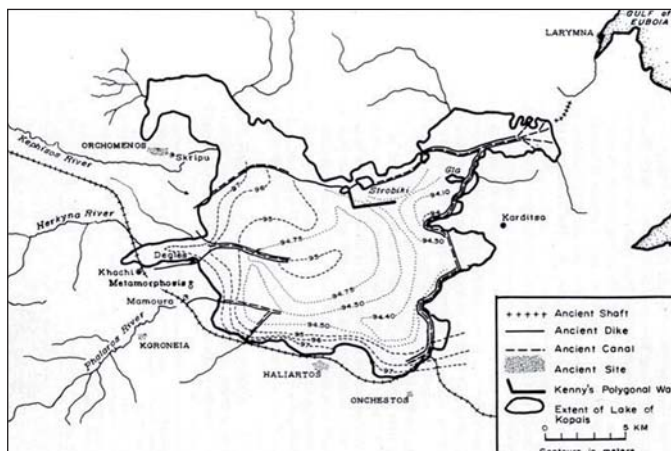
1. J.H. Oliver, *Greek Constitutions of Early Roman Emperors from Inscriptions and Papyri* (Philadelphia 1989), 264, N. 108.



New sequence of the first inscriptions according to the author.

attempts. Accounts of travellers show that prior to these works, the plain was regularly flooded and transformed into a swamp, a frequent phenomenon in karstic geological formations. Such a situation was a constant threat for villages and cultivations, as well as a real hazard for health and agriculture. What was the situation like in ancient times?

Hadrian's letters show that at the beginning of the 2nd century AD the plain was partly cultivated or farmable, at least in what was then the territory of Coronea. At the beginning of the 1st century AD, the geographer Strabo (IX 2.40) writes that, according to the tradition, "the place occupied nowadays by Lake Copais was previously dry, that it belonged then to the Orchomenians, its close neighbours, and that all sorts of crops were cultivated". The chronology provided is vague, but we know from other sources that the hegemony of Orchomenos – the capital city of the powerful kingdom of the Minyans – cannot have lasted beyond the middle of the 6th century BC. Besides, investigations carried out by a team of the Technische Hochschule of Munich brought to light a vast hydraulic network dating to the Mycenaean period (14th-12nd BC). Other works certainly took place later on in order to protect the farmable lands from the floods – some were initiated by Alexander the Great around 330 BC (Strabo IX 2.18) –, but there is no evidence that a systematic drainage of the plain leading to a complete drying out of the lake ever took place in ancient times: these works were occasional and always rather limited.



Cities and rivers of the Kopais Lake (reprinted from Pritchett, *Studies in Ancient Greek Topography*, II, 1969, p. 92 fig. 10).

All this seems to indicate that the same happened with Hadrian's involvement with the Coroneans. The economic situation was difficult in mainland Greece at the beginning of the 2nd century AD. The Emperor's action illustrates the support given by the Roman authorities to a city no longer able to protect its own territory and whose population was perhaps already suffering from malaria. But why was the Emperor's concern centred on Coronea, whereas the situation in the city of Orchomenos – whose name appears in the letters – must have been even more critical? One of the reasons for this was certainly the old federal sanctuary of Athena Itonia, located near the Coronean banks of Lake Copais, since Trajan already had cared about giving a new glory to the Itonion by turning it into the regional centre of the ethnic associations (koina) of Central Greece, as a statue base restored by Professor Knoepfler shows.

Despite their undeniable historical value, the letters of Coronea are still unknown to the general public, and even to scholars. They have indeed suffered misfortunes. The great Pausanias, contemporary with the Antonines and great admirer of Hadrian, was not aware of their existence because the letters had not been displayed yet when he was in Coronea around 160 (they must have been engraved in one go around 165 AD). The same has happened more recently: published half a century only after their discovery, these inscriptions escaped to Marguerite Yourcenar who certainly would not have missed the opportunity to credit her dear emperor of such a grandiose enterprise when writing her *Memoirs of Hadrian* (1951)⁽²⁾. Nothing indicated to the visitors of the Archaeological Museum of Thebes that on some random blocks displayed in the courtyard laid one of the best preserved Imperial correspondence in all Roman history. They will have to wait until 2009 – when the museum reopens to the public – to see the appropriate exhibition of an epigraphic documentation as instructive as some passage of Tacitus or Suetonius evoking the draining works of Lake Fucine in Central Italy. ■

Translation: Claire Grenet, ATER,
(Chair of Greek Epigraphy)

Revision: Fabienne Marchand (member of
the staff for the *Lexicon of Greek Personal Names*, Oxford)

2. See now *Hadrian Empire and Conflict*. Catalogue of the exhibition at the British Museum, July-October 2008, p. 29.

HISTORY OF INDIA AND GREATER INDIA



Professor Gérard Fussman,
Head of the Institute of
Indian Studies

The computerized library of Afghan pictures of the Collège de France's Institute of Indian studies

The library of the Collège de France's Institute of Indian Studies is the main library in France for classical Indian studies (sanskrit, literatures, linguistics, ancient Indian history etc.). During the last twenty years it also collected a very large number of geographical maps, most of them in the scale 1: 50 000, of the Indian subcontinent, ie of the countries lying south of the Hindu-kush and Himalaya ranges, including Afghanistan. Some may wonder why a library specializing in classical Indian studies chose to acquire and keep a great number of documents pertaining to Afghanistan.

Indeed for newspapers, diplomats and politicians, Afghanistan is mainly part of Central Asia. For linguists, it belongs mostly to the Iranian languages area. Now too many people forget that Afghanistan is a composite buffer state, whose boundaries were arbitrarily demarcated by the Russian and British empires between 1879 and 1886. By the Gandamak treaty, signed on May 26th, 1879, the British forced the Amir of Afghanistan to transfer them full jurisdiction over the Korram and Pishin valleys, the Sibi district, and the Khybar pass, ie every Afghan (Pashto-speaking) district lying south of the so-called Durand line, till then core part of the Afghan Empire. That Durand line became later the de facto boundary with Pakistan, but no Afghan government ever recognized that development, less so the Pashto (ie Afghan)-speaking tribes settled on each side of the Durand line: this is a key factor in the today Afghan conflict.

Before 1879, Afghanistan was part of Northern India. The first Afghan Empire, established by Ahmad Shah Durrani in 1747, included the greater part of today Pakistan. Till 1919, ie till the Independance war, the British Viceroy in

India was sole and fully in charge of the foreign relations of Afghanistan. Some hundreds years ago, Indian languages were spoken in Eastern Afghanistan. Some are still alive. Till the advent of Islam, cultures, faiths and polities in Eastern Afghanistan were fully Indian. Ashokan inscriptions are engraved in Kandahar and in the Laghman valley, which were then included in the Mauryan (Indian) Empire. Indian manuscripts, discovered in caches near by Jalalabad and Bamiyan some ten years ago, are now adding much to our knowledge of early Buddhist literature. The Muslim conquest of India started from Afghanistan. There were many Afghan sultans on the Delhi throne. Babur, who founded the last independant Muslim Indian empire, was born in Andijan, in today Ozbekistan. Starting from Afghanistan with a few men, he defeated the Delhi Lodi sultan, ie an Afghan, Pashto-speaking, sultan. He choosed to be buried in Kabul, the town he loved most, where his tomb is still to be seen. These facts, and many others, may explain why the present head of the Institute of Indian Studies at the Collège de France, and Professor of history of India and Greater India, started his career in Afghanistan. He was sent there to study and publish Indian inscriptions newly discovered and survey archaic Indian (Dardic and Nuristani) languages. When back in Paris, he also used to work in the library of the Institute of Indian Studies, which in the early sixties already kept a rich documentation relative to these fields, much increased since.

Research now needs pictures, both as sources of information and illustrations. So when in 2000 we had to make an archive of the 3000 pictures shot for the Chanderi project, mainly funded by the Collège de France and since published⁽¹⁾,

1. G. Fussman, D. Matringe, E. Ollivier and F. Pirot, *Naissance et déclin d'une qasba : Chanderi du Xe au XVIIIe siècle*, Publications de l'Institut de Civilisation Indienne du Collège de France, fasc. 68¹, Paris, 2003, 385 p.



Georges Redard, 1960.

we decided to establish a picture library inside the Institute, no more than a few shelves where we stored our photographs with a very simple catalogue. But colleagues who had heard about this project asked us to keep and preserve their photographic records, often quite good because they knew how to use cameras like professional photographers. The number of pictures we stored increased quickly with donations from G. Fussman (Afghanistan, Pakistan and Northern India), A. Bateau (Northern India), N. Delaruelle (South Indian temples), H. Diserens (Northern India and Himalayan range), and M. Le Berre (Afghanistan). To make them available, we had to transform a simple depot into a true library, ie we started to collect and write down as many data we could get about each picture (subject, place, date, even time), and make computerized indexes. We also started to digitalize pictures for the colours of some were fading away and it is easier and safer to communicate to users of the library digitalized pictures than dias or prints. This entails much work, for indexing a picture library is like indexing a book page by page. This work has been done for seven years now, without hindering the prime duty of the Institute (keeping books) for we were lucky to get from the Collège de France additional funds for computers and one technician's job, currently filled by Mrs Anne-Marie Cordero, working under the supervision of Eric Ollivier, architect attached to the chair of History of India and Greater India.

On receiving the donation made by the son of the late Marc Le Berre, during many years architect and photographer of the French Archaeological Mission in Afghanistan, we decided to start the digitalizing and computerizing of the picture library with our Afghan collection, which seemed at that time not susceptible to get increased. It was made from 6 x 6 pictures shot by G. Fussman and M. Le Berre. We have very complete data on the subject, the spot, the date, sometimes even the hour when they were shot. They mainly show archaeological sites and ancient buildings, most of them now much damaged or destroyed. A computerized

catalogue was ready mid-2007 and engraved on a CD-Rom containing c. 6000 pictures which we sent to interested institutions (Guimet Museum, Kabul Museum, Afghan Institute of Archaeology, French Archaeological Mission in Afghanistan etc.). Many scholars could also use it and got the authorization to reproduce pictures in books or papers they were writing.

We were starting to computerize our collection of Pakistan pictures when we received two donations of Afghan pictures, both very valuable, in all more than 2 000 pictures. These were outstanding pictures shot by Mrs Dominique Darbois, given by herself, and the late Prof Georges Redard, given by his widow, Mrs Madeleine Redard.

Mrs D. Darbois is a very well-known professional photographer. She published many books, most of them filled with pictures of children (*Parana, le petit Indien*, 1953; *Achouma, le petit Esquimau*, 1958; *Faouzi, le petit Égyptien*, 1965; *Terre d'enfants*, 2004; etc.). Her photographs of French Guyana Amerindians are also renowned. Her artistic sensibility is also demonstrated in her two books dealing with archaeological subjects: *Angkor* (text by J. Auboyer, at that time head keeper of the Guimet Museum, Barcelona 1971) et *L'Afghanistan et son art* (text by J. Auboyer, Paris 1968). This last book prints photographs, shot in 1965 and 1966, of monuments from Afghanistan and objects displayed in the Kabul Museum. Many, maybe most, of the Kabul Museum possessions she then photographed were either stolen in 1992 when the mujaheddins captured Kabul or destroyed by the Talibans in 2001. They are now documented only through photographs, the best of which are, without any doubt, those shot by D. Darbois. Some were published a second time in 2002 in a book co-authored by Francine Tissot (*Kaboul, le passé confisqué. Le musée de Kaboul 1931-1965*, Editions Findakly). Thanks to Mrs Darbois' liberality, we were able to digitalize all her Afghan pictures, published or not. She also gave us the

permission to communicate them to scholars. We are glad to acknowledge here our great debt towards her.

Georges Redard (1922-2005) held the chair of linguistics at Bern University (Switzerland). He had been a student, then a close friend, of E. Benveniste at the Collège de France and was later his executor. He gave to the Collège de France a great number of Benveniste's personal archives. His widow, Mrs Madeleine Redard, was kind enough to donate our picture library some hundreds of dias and prints, showing mainly Iran and Afghanistan landscapes and local people. That documentation was meant for illustrating books on art and geography, similar to those previously published by G. Redard (*La Perse (Iran)*, Zürich 1966; *Afghanistan*, Zürich 1974), or the *Linguistic Survey of Afghanistan* he was working upon till his death. That *Survey* was conceived after the model of his Swiss colleagues Jud and Jaberger's *Sprach- und Sachatlas Italiens und der Südschweiz*. It was a survey of "languages and things", ie the surveyors collected words and sentences together with the ethnographic data they referred to. The maps he was working upon would have been accompanied by pictures of landscapes showing the places where he and his surveyors collected data from 1964 till 1976 and of things and people referred to in the collected linguistic data. Many pictures were shot by professional photographers specially hired for that purpose, among them Mrs D. Darbois. The negatives of the black and white pictures are now kept in the Institute of Linguistics' archive at Bern University. In Paris, we keep enlarged prints of most of them, and some of Mrs D. Darbois' negatives.

Through the library of the Institute of Indian Studies at the Collège de France scholars may now use a very large collection of books and offprints on Ancient Afghanistan and Indian (Dardic and Nuristani) languages spoken on each

side of the Durand line, to which is now added a very large collection of pictures shot in Afghanistan from 1960 to 1980. At that time, the country was only starting to change through modernization. It did not yet suffer from damages brought by modern powerful ammunitions nor from recent galloping urbanization. Many of the monuments and objects shown in these pictures have now disappeared. Our French and foreign colleagues, who have started looking at them and using them, are quite conscious of the value of that documentation⁽²⁾. Our Afghan colleagues too. We are glad to be able to repay in that way a small part of the debt we owe them and their fellow countrymen. For it is with their help, and most often together with them, that we were able to work in their country. ■



Buddha' head, formerly in
Kabul Museum
Photograph D. Darbois - 1965.

2. So do we. All the photographs shown in the 97 plates of *Kabul Buddhist Monuments*, by G. Fussman, E. Ollivier and Baba Murad, Publications de l'Institut de Civilisation Indienne, fasc. 76, 1, Paris 2008, are preserved in the picture library of the Institute and available to every interested scholar and institution.

COMPARATIVE LEGAL STUDIES AND INTERNATIONALIZATION OF LAW HISTORY OF MODERN CHINA



The Death Penalty and Suicide in China: Past, Present, Comparisons

Seminar organized by Professors Mireille Delmas-Marty (Chair of Comparative Legal Studies and Internationalization of Law) et Pierre-Étienne Will (Chair of History of Modern China), 20-21 June 2007.

Even without reliable figures, there is no doubt that China today holds the record – by far – for capital executions per country/year. Beyond general considerations on the repressive nature of the Chinese regime, this reality raises a number of questions. This seminar has carried on with the approach adopted in 2002 and 2003 when we discussed the question of “Democracy and Tradition in China”⁽¹⁾: carefully examining the historical past which, to an extent still to be evaluated, is responsible for present realities. Moreover, we chose this time to compare Chinese realities with the situation in Japan, Europe, and the United States.

The problems regarding the death penalty and, in the same way, suicide, raise first of all the question of how life and death are approached – certainly a far-reaching question, which can in no case be reduced to identifying a few cultural “constants”. It seemed at the very least necessary to return to the manifold philosophical and religious sources of such notions in China. This was done by Anne Cheng (INALCO), Jean-Noël Robert (EPHE), and Catherine Despeux (INALCO), dealing respectively with Confucianism, Buddhism and Daoism. In his presentation on suicide in China on the eve of modern times, Pierre-Étienne Will took on these reflections starting from a body of writings by administrators. In such texts self-inflicted death is not discussed as a philosophical or religious problem – even though communication between the living and the dead, the omnipresence of ghosts, and so forth, are frequently mentioned – but as a social problem, as well as a phenomenon impossible to comprehend in a world where “even plants and insects aspire to life”.

What, then, of death inflicted as a punishment? Jérôme Bourgon (Institute of East Asian Studies, Lyon) offered a thorough survey of the death penalty in imperial codes. He stressed in particular that in imperial times the death penalty was grounded in the principle of retribution: one life secures one life. An important corollary – albeit admitting of some exceptions – is that the death penalty has no serious reason for being enforced in the absence of a homicide. Another point worthy of note is that, in the procedure such as it applied in late imperial times, a majority of death sentences did not lead to actual execution. Zhang Ning (University of Geneva) discussed “the body and death penalty in imperial China” with an emphasis on the effects of such non-standard (but still legal) methods of execution as dismembering the condemned person (lingchi), scattering the remains or exposing the head, in terms of desecration of the body and of “shame”: as is well known, preserving the integrity of the body bequeathed by one’s parents was an important tenet of the fundamental Confucian virtue of filial piety. By transforming the condemned into ghosts seen as a threat to the society of the living, this kind of “judicial bad death” raised important religious and ritual problems, both for the state and for lineages (the latter acquiring a considerable role in late-imperial society).

Execution by dismembering, which was abolished in 1905 with the rest of the so-called “cruel punishments”, was also discussed in another paper by Jérôme Bourgon, this one devoted to the penultimate application of this technique, in 1904, concluding a sensational case in which twelve persons from the same family had been massacred on the orders of a

1. See Mireille Delmas-Marty and Pierre-Étienne Will, eds, *La Chine et la démocratie : tradition, droit, institutions*, Paris: Fayard, 2007.



Mr Robert Badinter, Professors Pierre-Étienne Will and Mireille Delmas-Marty

local notable. For his part, Luca Gabbiani (EFEQ) examined how parricides were punished in Qing China, at least in a very peculiar sort of circumstance – children killing their parents in a fit of madness. In traditional Chinese law, madness was always counted among mitigating circumstances. Yet mad parricides were an exception as they were systematically condemned to death by dismembering, in exactly the same way as if the perpetrators were of sound mind. However, such inflexibility, which was grounded in the sanctity of family relations, gave rise to heated debate among legal specialists. It all ended in 1904, as part of the same effort to “modernize” law that led to abolishing lingchi altogether the following year. The problem of intent, central to the debates on the responsibility of homicidal madmen, was likewise discussed at length by the law specialists exchanging views in the course of the cases examined by Françoise Lauwaert (Université Libre de Bruxelles) in her paper on “Death penalty and the jurisprudence on accident in the eighteenth and nineteenth centuries”.

The second part of the seminar, which was devoted to contemporary legal aspects, also introduced a comparative perspective. Li Qinglan (attorney, Paris bar) began with a presentation on China’s (long) list of capital crimes and a study of cases illustrating the problems lawyers encounter in defending persons accused of such crimes. She noted, however, that a doctrinal debate begun in 2000 has resulted in a more limited application of the death penalty. Lu Jianping (Renmin University of China) confirmed this evolution, adding that China may soon ratify the International Covenant on Civil and Political Rights. Lu cautioned, however, that the diversity of rights, practices and popular attitudes in China create various problems. The same is true in Japan, as

Eric Seizelet (Institute of East Asian Studies, Lyon) pointed out in his presentation on alternative sentences. His analysis indicates that there is little chance of the death penalty being abolished in Japan in the near future: the abolitionist discourse is weak and not yet heard by decision makers; democracy serves as an alibi that silences public debate of the death penalty; and international pressure is ineffective. In Europe, the approach to life and death has evolved, as Geneviève Giudicelli-Delage (University of Paris I) illustrated through examples of suicide and euthanasia that highlight the dialectic between law and life and the question of a right to death. Stefano Manacorda (University of Naples) brought the focus back to the death penalty in Europe, or more precisely, its abolition in peacetime and wartime. He emphasized, however, that since September 11, 2001, international police and judicial cooperation has increased and may result in state “disengagement” from international agreements in this area. With respect to the United States, Naomi Norberg (Collège de France) noted that the death penalty had followed two successive waves of popularity, but certain limits on its application, such as in the case of minors or the mentally handicapped, and on methods of execution (lethal injection) allow one to hope that in the long term the current wave will definitively recede.

Mireille Delmas-Marty believes the comparison illustrates that the conflict between the relative and the universal is being overcome to some extent. Relativism has of course not disappeared, and the representation of pairs such as “life/death” and “human/inhuman” is deeply rooted in each national tradition. But traditions evolve, and even if the abolitionist movement is slow and halting, it seems universal, or at least universalizable: despite the diversity of values underlying national legal provisions, abolition is gaining ground in domestic law and being strengthening in international law. Robert Badinter (former Justice Minister) is convinced of this, and views the current abolitionist movement as proof that, in the short or long term, abolition of the death penalty is inescapable. ■

MOLECULAR IMMUNOLOGY



Professor Philippe Kourilsky
Chairman
Singapore Immunology
Network (SigN)

Expanding research activities in Singapore

At the end of 2005, the A*STAR governmental agency in Singapore asked Professor Kourilsky, who holds the chair of Molecular Immunology, to help strengthening research in immunology in Singapore. A development plan was designed, approved in April 2006, and gradually implemented within the Singapore Immunology Network (SigN) which was created for this purpose. On this occasion, a cooperation agreement was signed on 15th December 2005, between Collège de France and A*STAR. It encompasses mostly biology, chemistry, mathematics and physics.

The development plan for immunology includes several actions:

The implementation of a strong nucleus of basic immunology located in the new scientific city known as Biopolis.

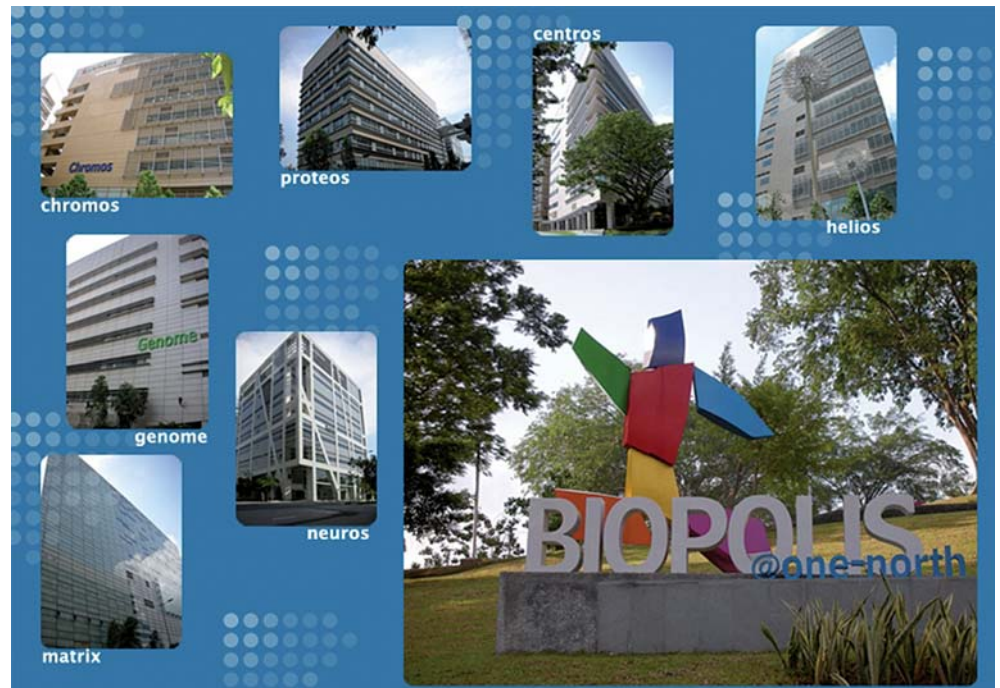
The setting of collaborations with other Singaporean entities particularly to ensure transfer towards the clinics, in fields such

as cancer, allergy, autoimmune disorders and infectious diseases.

The development of international cooperation.

The decision to create Biopolis dates back to 2001. In 2004, 75% was built up and operational. Today, it is essentially complete, with the potential to welcome 4000 researchers. Technological platforms are particularly well developed. One of the last buildings to emerge was named Immunos because it houses the immunology nucleus which the heart of SigN. 6000 m² of equipped laboratories were opened in September 2007.

Ultimately, in 2 to 3 years from now, some 25 independent groups of 10 researchers each will work in the new facility. Recruitments are international. In January 2008, 7 groups were settled, 4 of which were run by Europeans. The chair of molecular immunology was allocated space where two scientific projects are



being developed, one dealing with innate immunity, the other with an infectious disease. The funding mechanisms display some peculiarities. One, and not the least, is that the A*STAR agency covers all the expenses of the research groups such that, they do not have to compete for external grants.

To be consistent with the objectives set by the government of Singapore, SIgN labs in Immunos are strongly focused on basic immunology, preferably in humans, while gradually incorporating, as best as this can be done, the questions, tools and concepts of systems immunology (Systems immunology was the topic of the immunology course given during the academic year 2006-2007 at the collège de France) Ongoing recruitments (4 additional groups are in the process of joining) take these priorities into account.

SIgN devotes a fraction of its funds to the promotion of collaborations involving other research groups belonging to the two large Singapore universities (NUS and NTU), hospitals and other health institutions. A scientific society, the Singapore Society for Immunologists was launched in January 2008. The potential

to interface with other scientific communities is about to increase significantly: under the auspices of A*STAR, a second scientific city, Fusionopolis, is being built in the close proximity of Biopolis. It will be dedicated to engineering, physical and computational sciences, and will ultimately home 5000 researchers.

A number of agreements have been made between A*STAR and/or SIgN and foreign institutions, the Karolinska Institute in Sweden, the Riken Institute. Discussions are on the way with Australian, British and other institutions, as well as with INSERM and the Pasteur Institute, not ignoring the implemented agreement with the Collège de France. ■

Website: <http://www.sign.a-star.edu.sg/>



HISTORY OF EUROPEAN MEDIEVAL AND MODERN ART



Professor Roland Recht

‘The Grand Atelier. Pathways of Art in Europe (5th – 18th centuries)’ was the main event at the Europalia festival organized to celebrate the 50th anniversary of the Treaty of Rome. Over 350 works from 160 public collections were presented at this exhibition, held at the Palais des Beaux-Arts in Brussels from 5 October 2007 to 20 January 2008. A 340-page catalogue in three languages was published by the Mercator Fund.

Excerpt of the press conference held on 4 October 2007 by Professor Roland Recht, Commissioner of the exhibition:

“[...] Why the ‘Grand Atelier’? An artist’s workshop or studio is both a mental and a craft space where the painter’s, sculptor’s or cabinet maker’s trade is taught, for example; where the *compagnons* and apprentices gradually rise to the level of their master; and whence the reputation of a name is passed on by imitators, sometimes of a remarkable standard, or by art lovers. It is a space where works are designed, created and often shown to other artists and collectors.

Over the centuries the European space itself has resembled a huge workshop, or set of workshops, with their specific practices, singular styles and multiple connections. The overlaps, encounters and direct or indirect contacts have created this constantly shifting European space, open to the outside.

We could, for instance, talk of an itinerant grand atelier, that of migrant peoples who crossed Europe in all directions, with neither houses nor temples, and who carried with them magnificent jewellery that they created with few tools. Their taste for adornment is comparable to that of the manuscripts that Irish monks took with them to Christianize the continent. From Charlemagne’s time we can also talk of a grand atelier between the Rhine and the Seine, consisting of dozens of scriptoria, close to the imperial or princes’ courts, where scribes copied Greek or Latin texts, and prodigious artists dipped into the tradition of antiquity for scenes which they adapted to new programmes.

At a very early stage these ateliers proved to be open to the Mediterranean world: Byzantine art passed through Venice and the south of Italy, and Muslim art through Spain, and the beauty and virtuosity of its formal inventions enriched the ateliers of artists and stone masons as far afield as the Pyrenees [...].

Ateliers were places of intense circulation of both ideas and people. Their reputations were based on the originality or quality of their creations: Limoges enamels, alabaster sculptures from York or Nottingham, and retables from Brabants were exported far and wide. In Scandinavia, the Iberian lands and Central Europe alike, luxurious commissioned works rubbed shoulders with mass productions.

Themes drawn from poets’ or theologians’ sensibility materialized in representations which exposed all social classes to new images such as the figure of the Virgin whose idealized beauty was influenced by courtly poetry. The Virgin was depicted as a mother showing tenderness towards her child. She played an essential part in the humanization of art in the Middle Ages.

The grand atelier was also the itinerant career of certain artists. Sculptors and illuminators of manuscripts were great travellers whose careers sometimes took them from one end of the continent to the other. The discoveries in the chateau of Buda in Hungary, for example, attest to the presence of sculptors who came from the West to fulfil a large royal order.

A new type of atelier appeared at the dawn of the modern era: the printer’s office. Owing to the advent of the printing

press, the Treaty of Vitruve was circulated throughout Europe and determined the future of European architecture.

In the age of Internet, a special place has been reserved for books in this exhibition: a wonderful sort of library, divided into various sections, with some of the greatest books from the history of humanity. The circulation of books, more than any other object, has contributed to the definition of a European cultural space.

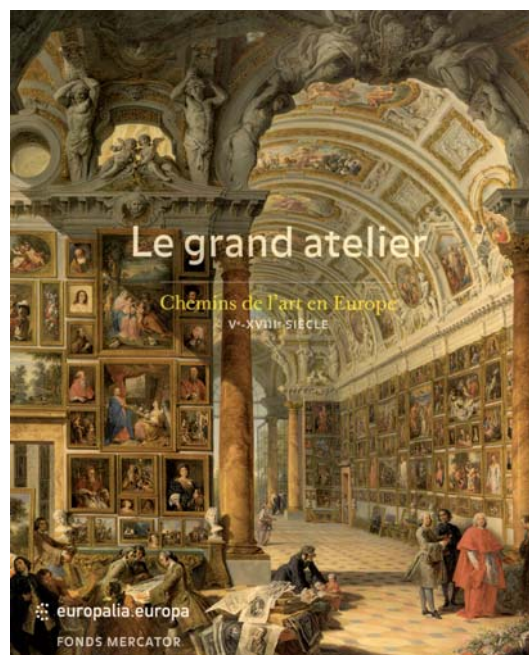
The grand atelier of Europe was open to the outside world at a very early stage and thus extended its perspective way beyond geographical Europe. Its view of distant worlds – Africa, Oceania, the Americas, India, the Far East – was initially one of superiority: Europeans considered the ‘others’ as savages, to whom they felt superior. But this view changed gradually. With the Enlightenment and Cook’s expeditions, it became more demanding, almost scientific, and therefore more objective.

The grand atelier also consisted of the dialogue between the great masters of European art during the seventeenth and eighteenth centuries, as well as the dialogue that they had never severed with the tradition of antiquity. If art was to imitate antiquity, it also had to be able to

surpass it. Thanks to that surpassing, a court artist like Bartholomaus Spranger, in the service of Rudolph II in Prague, produced an exceptional painting which both singularizes him and attests to his prodigious artistic culture [...].

This culture was completed to a large degree by the artists, art lovers and first art critics during the eighteenth century, owing to the existence of large collections accessible first to the nobility and then to the bourgeoisie, to whom it afforded an opportunity to become cultured. In the Enlightenment century, the grand atelier was an exhibition space where art was available to all, to contemplate and judge.

The final section of the exhibition is devoted to the cabinets of art lovers who rivalled one another in financial means and ostentation, in the collecting of key works in the history of painting. In former princes’ collections represented in the paintings of Franken, Teniers and Pannini, art lovers are seen discussing art and thus applying their knowledge or honing their sensibility. In this way a new form of European sociability was born.” ■



The catalogue is distributed in France by Éditions Actes Sud.



Professor Anne Fagot-Largeault

Research Methodologies in Psychiatry

During the 20th century, psychiatry has undergone several upheavals that have transformed practices but failed to provide any certain knowledge about the nature of mental disorders. The Freudian methodology of the analysis of the unconscious and the discovery of the main psychoactive drugs have both led, albeit in very different ways, to the treatment of the disorders affecting individuals, whereas the anti-psychiatry movement claimed that individual symptoms merely reflected the ills of society. This might explain the tensions internal to medical practices, as well as the fact that the latter were challenged, the echoes of which can be found in Michel Foucault's work, from his thesis on the *Histoire de la folie à l'âge classique* to the lectures on *Psychiatric Power* he gave at the Collège de France in 1973 and 1974.

The new paths of research that have emerged in recent years (neuro-imaging, genetic analysis, cognitive sciences) have been presented during the conference entitled "Psychiatric Research: Multiple Disorders, Common Models?" (June 1st, 2007). On January 31st, 2008, psychiatrist and philosopher Jean-Noël Missa, Professor at the Université Libre de Bruxelles, introduced us to his current research on the evolution of psychiatric practices in Belgium, as they have been described in his recent book *Naissance de la psychiatrie biologique* (PUF, 2006). A colloquium aiming at building bridges between neuroscience and psychoanalysis was held on May 2007, under the lead of Prof Pierre Magistretti, who was the holder of the International Chair for 2007-2008.

This year, research on mental disorders is the topic of Prof Anne Fagot-Largeault's seminar, which is entitled "Research Methodologies in Psychiatry". A first session, held on April 10th, was run by Prof Frank Bellivier (Créteil, Inserm U 841) and Prof B. Falissard (Paris, INSERM U 669).

Frank Bellivier has edited, together with Prof Marion Leboyer, a volume entitled *Psychiatric Genetics. Methods and Reviews* (Humana Press, 2003). He has been involved for several years in genetic surveys and analyses (*segregation analysis, linkage studies, pair*

studies, association studies, etc.) aiming at the identification of vulnerability factors for various types of mental disorders. He mostly talked about bipolar disorders (what used to be called manic-depression). While underlining the limits and methodological biases of the various methods generally resorted to, he gave a tentative account of the results obtained so far. To put things briefly: although the existence of genetic vulnerability factors is well established, these factors are difficult to identify, most notably because of their interaction with epigenetic (developmental) factors and other likely environmental factors. Frank Bellivier was thus able to show that there exists a (statistical) link between the early onset of a first pathological episode and the nature (and seriousness) of the trauma the patient has undergone (environmental factor), but also that there exists a link between the early onset of a first pathological episode and the likelihood, for a first degree relative, of developing similar disorders (genetic factors).

Bruno Falissard's approach is mostly focused on the care of the patient and the effectiveness of the treatment of her sufferings. He is in charge of children and teenagers. He has presented his theoretical views in a small book entitled *Cerveau et psychanalyse: tentative de réconciliation* (L'Harmattan, 2008). The model he advocates intends to provide conceptual tools that are "neutral" enough to integrate, in the same picture of cerebral functioning, genetics, psychoanalysis, and even phenomenology. He draws a "formal brain" under the form of a mesh, each intersection of which is constituted by a neuron that is inserted in various interconnected compounds. Within these compounds, the alternative activation and deactivation of the neurons ends up by stabilizing itself and produces convergence phenomena. We are thus led to a representation of subjectivity as a landscape, a sort of cartography, in which each memory, experience or trauma constitutes an "attractor", that is a trace whose depth varies according to its intensity and the level of convergence reached during the memorizing process. ■

Jean-Claude K. Dupont

Others dates:

- 5 May 2008, Paris, with Prof Pierre Magistretti (Collège de France) and Luc Mallet (INSERM);
- 19 June 2008, Bonn (Germany), with Felix Thiele (Eur. Akad.), Michael Quante (Köln) and Alain Leplège (Univ. Paris 7);
- 8 October 2008, Paris, with Louis Sass and Bernard Granger;
- 18 December 2008, Paris, with Georges Chapouthier and Pierre-Henri Castel.

This lectures can be downloaded from the Collège de France Website. Page of Prof Fagot-Largeault

HISTORY OF INDIA AND GREATER INDIA



Mrs Kapila Vatsyayan and Professor Gérard Fussman

On 4 April 2008, at the invitation of Professor Gérard Fussman, Mrs Kapila Vatsyayan addressed a large audience on 'The building of the main cultural institutions of independent India'. Mrs Vatsyayan, born on 25 December 1928, has played and still does play a key role in the Indian Republic's cultural policies. Daughter-in-law of a great Sanskritist, sister of a well-known poet, and famous dancer, she is above all an intellectual who studied at the best universities (MA in English in 1949 in Michigan, PhD in Sanskrit in 1952 at Banaras Hindu University). Very close to J. Nehru and his family, a leading member of the Congress Party, for a long time Secretary in the Ministry of Education (Department of Arts) after occupying other senior positions in that Ministry, she was one of the main actors first in the implementation of the cultural policy of independent India, then of its designing. Mrs Vatsyayan was behind the creation of many institutions, including the Centre for Research on Contemporary History, known as the Nehru Memorial Museum and Library, the Sarnath Institute for Tibetan Studies, the Centre for Cultural Resources and Training and, finally, the eminent Indira Gandhi National Centre for the Arts. She has worked on the organization of museums and scientific societies, and the maintenance – often the rescue – of their collections. Mrs Vatsyayan has also striven to revitalize the Indian archaeological service, and has encouraged the restoration of threatened historical buildings in Indianized Asia (Angkor Wat, Bamiyan). In the same spirit, she has supervised the organization of large Indian art exhibitions abroad.

In 1990 Mrs Kapila Vatsyayan founded the Indira Gandhi National Centre for the Arts which she directed until 2000. There she organized the systematic microfilming of all

“The cultural policies of newly independent India” A talk by Kapila Vatsyayan

Indian manuscripts, the publication of numerous volumes on the Indian arts, and excellent exhibitions of ancient and contemporary art. She has written many books, including: *Classical Indian Dance in Literature*; *The Square and the Circle of Indian Arts*; *Bharata: the Natya Sastra*; and *Matralaksanam*.

Mrs Vatsyayan is still highly active in the management of the India International Centre, a meeting place of Indian and foreign intellectuals in New Delhi, where since 2004 she has organized a series of high-profile seminars to renew and promote former political, cultural and socio-economic relations between India and Asian countries (IIC-Asia Project). She is a member of the upper house (Rajya Sabha) of the Indian parliament and represents the Indian government on the executive board of UNESCO.

The talk at the Collège de France was not organized to pay homage to Mrs Kapila Vatsyayan. She was invited to the Collège to explain her audience what the motivations of the newly-independent Indian government's cultural policies were. It was a talk on contemporary history, in which she spoke standing up for over an hour, without a single note. She started by discussing the dual status of cultural institutions in British India: on the one hand, purely Indian traditional institutions, without any British presence except, in very few cases, in a private capacity; on the other, British institutions founded by the British government in India, in which many Indians were employed but in a subordinate role.

Many traditional institutions were still thriving in 1947. Considerable efforts had been made to create new ones, in which British innovations were adopted to withstand their impact on Indian culture, for instance the Brahma Samaj, the Ramakrishna Mission, or the University of Shantiniketan founded by Rabindranath Tagore. These institutions nevertheless remained isolated, without government support, except in the principalities where some maharajahs granted them their patronage. Notwithstanding their real

utility, British institutions or those of British inspiration – universities, museums and large centres, called Surveys because they served the colonizer’s aim of drawing up inventories of everything in the colony (Geological, Botanical, Zoological, Archaeological Surveys) – contributed to an opposition between Western culture and traditional Indian culture, always seen from the outside.

In 1947 Nehru defined the principles of the Indian federal state’s cultural policy, which he considered to be as important as the creation of a democratic state and an economy that was strong enough to guarantee the country’s independence. Two main thrusts of that policy were: promotion of an Indian culture without denying the Western input, by combining tradition and modernity; and fostering “Indians’ awareness” of belonging to a single large country characterized by diversity as well as profound, age-old unity.

Mrs Vatsyayan noted that the Congress Party government was able to rely on an existing structure: a few large cultural institutions administered and financed by the state; princes’ patronage of the arts and literature; the broadcasting of music by All India Radio; and some history and civilization courses offered by universities. Yet, next to nothing had been done for such disciplines as aesthetics or the practice of the arts, and the state had little concern for the development of cultural, individual or collective activity.

Although priority was given to economic development, requiring considerable investments, the Indian government did nevertheless launch a few programmes on a national scale. Indian history and civilization classes were introduced into the high-school curriculum, the practice of traditional arts in villages was encouraged, new museums were created, and traditional craftwork was supported. Nehru took a decision of great symbolic impact when he invited representatives of tribal and traditional village arts to Delhi on Republic Day every year. The initiative afforded an opportunity to expose the urbanized Indian elite to the creativity and richness of the tribal and village art and cultures of their country, which until then had been despised.

The government of newly-independent India also founded three academies at national level (music and dance, fine arts, and literature). It

furthermore made a systematic effort to create national institutions for the study and development not only of Islamic, Buddhist and classical (Sanskrit) culture, and of contemporary Indian languages, but also of English and other foreign languages. Particular attention was paid to archives and especially to public or academic libraries, with the intention of opening them more to the public and preserving their richness. Special attention was paid to manuscripts as they were often neglected and in a very poor condition.

The ‘conquest’ of Indian culture also involved the ‘recovery’ of the great Sanskrit texts of which the originals had been lost but which still existed in highly accurate Tibetan translations. These texts had been one of the vehicles of Indian influence outside the sub-continent. For this purpose the government created the Sarnath Central Institute of Higher Tibetan Studies, and provided substantial support to the Sikkim Research Institute of Tibetology, and the Tibetan Library in Dharamshala.

Mrs Vatsyayan also explained the efforts made at national level to develop the study of Sanskrit and regional languages, archaeology, and the conservation of historical buildings. She emphasized the creation of two large institutions, the National Museum of New Delhi and the Nehru Memorial Museum and Library, pointing out that these institutions, responsible for maintaining the memory of India’s greatness, had been designed to be wide open to the outside as well. They moreover benefited from the expertise of an eminent American specialist, Mrs Grace Morley.

Due to a lack of time, Mrs Vatsyayan simply mentioned in passing the efforts made by the Indian government to foster the development of contemporary painting, dance and classical Indian music, all disciplines dear to her, and the organization of Indian art exhibitions abroad. Modestly, she chose not to mention the eminent institution which she founded in 1990, the Indira Gandhi National Centre for the Arts, nor the one in which she still plays a key part, the India International Centre. These two institutions perpetuate J. Nehru’s and the first Indian government’s policy of developing a specifically Indian culture which respects the past yet is open to change and to the best foreign influences, and of showing the world the importance and modernity of this culture. ■



Mrs Kapila Vatsyayan

O-FUDA COLLECTION DONATED TO THE COLLÈGE DE FRANCE



O-fuda representing Jūichimen-senju Kannon *o-fuda* (One-Thousand-Armed and Eleven Faced Avalokitesvara) from the Kiyomizukannon-dō of Ueno in Tokyo. This *o-fuda* is the first one obtained by Bernard Frank.

The Collège de France has recently received the donation of about one thousand *o-fuda*. These images were collected by the late professor Bernard Frank (1927-1996) who was—and still remains—the only holder of the “Japanese Civilization” chair in this institution. His widow and his children have made it plain that, through this donation, his work might be pursued and completed within the Institute for Advanced Japanese Studies (Institut des hautes études japonaises) that Bernard Frank himself directed for more than twenty years.

O-fuda are strips of paper with written inscriptions or woodcut images (nowadays most of them are printed using modern techniques) distributed by temples. They represent Buddhas or other deities worshipped at these religious sites. Faithful believers bring them back to their homes and use them as objects of worship, asking for the deities’ protection or making vows in their presence.

In 1945, as winter was reaching an end—it was in fact the first year after the Liberation of France from German troops – Bernard Frank, then in his “philosophy class” in high school at the Lycée Carnot in Paris (the last year in the French high school system) heard



O-fuda representing the deity Myōken at Yanagishima (Hōshō-ji temple) in Tokyo.

for the first time the name of an Irish writer called Lafcadio Hearn. His mind was captured at once and he became a devoted reader of Hearn’s works: “Within three weeks I had bought a dozen of his books and taken the decision to learn Japanese from the next academic year.”

While reading Hearn’s works, B. Frank discovered that religions mixed with almost every aspect of Japanese everyday life. He felt a special attraction for the sheer multitude of Buddhas and deities. In fact, when Buddhism reached Japan, the final point of a long itinerary accomplished while absorbing a vast array of cultural and religious currents, it had already reached a far more complex state than its original version in India. Furthermore, Buddhism had assimilated Japanese local religion, Shinto, and given birth to an entirely unique and original world of beliefs that has survived until today. B. Frank in the foreword written for the catalogue he projected of his *o-fuda* collection made the following statement:

“I had always felt a strong fascination towards the almost infinite variety of all the religious figures venerated in Japan. These figures are at the same time witnesses of a



O-fuda representing Emma-ō (King Yama) from the Ennō-ji temple in Kamakura.

very ancient tradition, of the high number of religious schools and traditions and of an open religious attitude built on tolerance and imagination that constitutes one of the defining traits of Japanese people. Japan was one of the rare countries that had been able to maintain in all its abundance this proliferating Buddhist pantheon that had vanished in so many other situations.”

Bernard Frank nourished then the dream of an inventory of data concerning these innumerable objects of worship, and *o-fuda* appeared to him as a very appropriate mean to bring such a project to completion. Once again, he had discovered in L. Hearn’s pages the existence of this iconographic material. In *Glimpses of Unfamiliar Japan*, Hearn relates how he had bought a small engraving of Emma-ō (King Yama) reproducing a famous sculpture of this deity made by Unkei while visiting the Ennō-ji temple in Kamakura.

“Through reading this text, one could not help but wonder if Hearn was referring to a general custom in all Japanese temples to have images of their Buddhas and deities engraved in a similar fashion so that they could be distributed to pilgrims should they

require it. If it was indeed the case, the person who would visit the greatest number of temples, transforming himself according to Ernest Renan's words into the "Pausanias of all these temples", would have in front of him the highly stimulating prospect of gathering a vast quantity of these small figurations. The merit of these figurations lied in their ability to illustrate religious figures while retaining variations brought by local traditions. To compare these variations between themselves and with canonical forms, to shed a light on them with the knowledge of tales written to justify their origins, to study the symbolic value of characteristic elements: the nature of all these elements could not but kindle a scholar's imagination."

B. Frank then started to travel throughout Japan from North to South. In a forty-year span going from his first trip in 1954 to his last in 1994, he had visited more than 2000 temples and collected about 1000 *o-fuda*. He classified them along six categories defined in *Butsuzô zui (An Illustrated Vocabulary of Buddhist Images)* – a work written in 1690 by a monk called Gizan and illustrated by a painter named Tosa Hidenobu.

B. Frank's collection is not the only one of its kind. Within European limits, we already know of two other examples. The first one is the Basil H. Chamberlain Collection at the Pitt-Rivers Museum in Oxford. It was gathered by Chamberlain (1850-1935), a British philologist and one of the founding fathers of Japanese studies in Europe. The second collection was assembled by André Leroi-Gourhan (1911-1986), himself a professor at the Collège de France holding the chair in prehistoric studies. This second collection now belongs to the Musée d'ethnographie in Geneva. Leroi-Gourhan had also collected a hundred of *o-fuda* for the Musée de l'Homme in Paris (formerly in Trocadéro they are now at the Quai Branly Museum).

Professor Frank's original approach was to use these popular artifacts as intrinsically valuable iconographic materials in the course of his scientific investigations as he sketched them in his inaugural speech at the Collège de France and subsequently in his various publications dealing with Buddhist deities.

His aim was to study "How beliefs connected with everyday life" while using this popular material side by side with canonical and doctrinal sources. He even chose as the title of one of his first seminars: "Buddhist Pantheon and Japanese Society". In the year 2000, we have collected his works in two volumes: the first one, published by Odile Jacob, consists of detailed summaries of his seminars at the Collège de France and appears under the title *Dieux et bouddhas du Japon*. A second volume of his studies on Japanese Buddhism was published by the Institut des hautes études japonaises at the Collège de France: *Amour, colère, couleur: Essais sur le bouddhisme japonais*.

As we previously mentioned, B. Frank planned to write a complete catalogue of his *o-fuda* collection but his final illness and his untimely death left this work in an incomplete state. Yet we are fortunate enough to be able to use a precious working instrument to carry on this task. B. Frank had wonderfully reorganized the permanent exhibitions of Japanese Buddhas brought from Japan by Émile Guimet in 1876 and now in the possession of the Guimet Museum. The catalogue he wrote on this special occasion has become the best handbook available on Japanese Buddhist iconography (*Pantheon bouddhique au Japon – Collections d'Émile Guimet*. Paris: Réunion des Musées nationaux, 1991). In order to write this catalogue, *o-fuda* were very serviceable to him because they reproduced quite precisely the various forms taken by deities. In his study on Myôken-bosatsu, B. Frank tells how he was able to identify precisely a statue at the Guimet Museum using a *o-fuda*. This statue was none other than a replica of the famous Myôken statue at the Yanagishima temple in Tokyo worshipped by Hokusai a long time ago (*Amour, colère, couleur*, p. 138).

In the fall of 2006, two events organized in Japan have demonstrated the value of B. Frank's collection. First the publication of his book *O-fuda ni miru Nihon bukkyô (Japanese Buddhism as Seen through its Popular Religious Images)* and consequently the exhibition of his collection at the Machida Municipal Museum in Tokyo. These two events came as a big surprise for the Japanese public who discovered a cultural heritage until then forgotten. In

Japan, *o-fuda* collections are extremely rare because the very nature of these religious objects prevents them to be kept more than one year at home. Alas, one must add that this tradition is gradually vanishing. Some temples have even stopped the printing and the diffusion of their images.

After B. Frank passed away, the incomplete *o-fuda* catalogue he had left was taken over by his friends and his students at the Institut des hautes études japonaises. Now this project is placed under the care of the research unit UMR 8155 "Chinese, Japanese and Tibetan Civilizations" with the scientific and technical help of Kokugakuin University and of the Historiographical Institute at Tokyo University. Thanks to Toshiba International Foundation generous funding, we have opened an internet site that although in progress brings to the public access to our documents and ongoing studies (<http://www.ofuda.org>).

One of our dearest projects is to hold an exhibition in Paris with all the detailed captions that were unfortunately missing at the Machida exhibition. On this occasion we would like fulfill B. Frank's wish and to publish a *catalogue raisonné* of the *o-fuda* collection. ■

Sekiko Petitmengin
(Translated by François Lachaud)



Bernard Frank standing in front of his *o-fuda* collection. On his left the famous Japanese novelist Inoue Yasushi who made the following comment about this visit: "When I visited his apartment, I made the wonderful experience of finding myself in an almost complete Japanese atmosphere impossible to find anymore in Japan. The very reason for this unique experience to happen was the presence of more than one thousand of these *o-fuda* distributed by Japanese temples to faithful believers, methodically classified and ordered between his office and the adjacent room. Rising from all these popular images, I became aware of the yearnings of Japanese people to live free from the anguish of sickness and from natural calamities."

GUEST LECTURERS

Nicholas PURCELL

Official Fellow and Tutor in Ancient History, St. John's College, Oxford (United Kingdom)

invited by Assembly of the Professors on the proposition of Prof John Scheid

He has given in October and November 2007 four lectures entitled:

1. Becoming Maritime
2. The slopes of connectivity
3. On the fringes of the Mediterranean: ecology, networks, interdependencies
4. The Tethys corridor and problems of the Transeuphratean.



Is the Mediterranean a concept with which interesting history could or should be written? If so, what kind of history? These were the questions which underlay *The Corrupting Sea*. These lectures explore how we might approach the relationship between Mediterranean histories and those of the world which surrounded the Mediterranean region. They are focussed on the evidence from the ancient world, but there are forays into more recent history.

I. Becoming Maritime

Ancient thought strictly distinguished the terrestrial from the maritime. That distinction is well understood. This paper explores the ways in which ancient writers spoke of overcoming that separation, and 'becoming maritime' instead of the normal orientation of human life towards the land. The locus classicus is Herodotus 7, 144: *anankasas thalassious genesthai Athenaious*, a precedent spectacularly developed by the Roman strategy against Carthage in the First Punic War. The topos has a long history in numerous essentialising accounts of unexpected military success. It is worth asking how this familiar framework relates to more realistic social and political histories of Mediterranean *gens de mer*. The enquiry opens up a vision of the practicalities and purposes of more or less coercive mobilisation of people in a maritime milieu which thereby acquires both a distinctive historical personality and a certain type of relationship with the

terrestrial regions from which seafarers are recruited. The comparison in turn illuminates in a new way the well-known episodes of 'becoming maritime' in ancient history.

II. The slopes of connectivity

The first lecture delineated the boundary between the places where *gens de mer* were recruited, and the sea on which they were deployed. As a space, the latter was defined by this mobilisation, and more broadly by its connectivity. Those who lived closest to the sea could be mobilised easily and repeatedly: but this paper starts with cases in which the least likely land-dwellers 'became maritime': mountain dwellers, and barbarians from distant interiors. 'Becoming maritime' now appears as one movement along a gradient towards the high connectivity of the sea, and that gradient can be modelled according to its relationship with connectivity, and above all to the mobilisation of goods and people. Terrestrial interiors had their regimes of connectivity too, and the paper explores the history of changing polarities, in zones between sea and continent, in which both sea-borne and land-based formations can dominate, a recursivity for which the name *sociétés du ressac* is borrowed. The dynamics of these changes can be closely linked to the development of states, and an attempt is made to seek some common denominators in the development of small polities on the

fringes of Mediterranean space from the Bronze Age to the Middle Ages.

III. On the fringes of the Mediterranean: ecology, networks, interdependencies

This lecture has concentrated on one of the main dynamics of the interactions which were explored in Lecture II: commercial exchange. The aim of the exercise is to re-evaluate some of the evidence for the Greek and Roman trader, in the hope that the broadly ecological approach may make more sense of the diverse contexts and patterns of ancient trade than the modernising models which we habitually use. Like state-formation, ancient trade-diasporas and *réseaux marchands* turn out to benefit from being seen as features of the Mediterranean periphery. Not only are they connected intimately with connectivity, but they turn out to have a special relationship, through the importance of the slave-trade, with the coercive mobilisation which is turning out to be a salient characteristic of a distinctively Mediterranean history.

IV. The Tethys corridor and problems of the Transeuphratean

So far, the terrestrial interiors (or other maritime spaces) whose histories can be juxtaposed with those of the Mediterranean have not received much comparative attention in this series. In the fourth lecture, the themes of the earlier three discussions have been revisited to examine the relationship between a Mediterranean

world and its neighbours to the East. The lowland corridor which includes Mesopotamia, and which runs from Syria to Elam and the mouth of the Persian Gulf is proposed as a region which is both a connective space in its own right, whose peripheries can be explored in similar ways to the Mediterranean peripheries which we have examined, and in important ways a prolongation of Mediterranean space, in a single unit,

le couloir de Téthys of the title. The Mediterranean of *The Corrupting Sea* takes its place as a unit with a distinctive regime of connectivity, which can be set alongside other such units, and made the subject of comparison, or of ‘connected histories’ involving more than one in parallel. The zone charnière of the Levant ceases to be a frontier between alien realms, but a space of transition between closely comparable units.

This is a type of analysis which can be used with interesting results for other Mediterranean margins with complex but essentially connective spaces, such as the Sahara or the Atlantic façade. It proposes a Mediterranean which continues to be a worthwhile object of separate historical reflection, without being unacceptably promoted as exceptional. ■

Denis DUBOULE

University of Geneva, Federal Polytechnic School of Lausanne (Switzerland) has given one lecture during the course of Prof Anne Fagot-Largeault, holder of the Chair of Philosophy of Life Science.



Since 2006, Anne Fagot-Largeault has dedicated two series of lectures to “the Ontology of Becoming”. On March 20th, 2008, she has invited Prof Denis Duboule, head of the Department of Zoology and Animal Biology at the University of Geneva, to give a talk entitled: “The Mechanisms of Biological Evolution”.

Ontology allows for the identification of what *is*. Any scientific theory or any philosophy rests on an ontology, even if the latter may remain implicit or may often differ from what *is* according to common sense. This ontological assumption is problematic for the life sciences, because “*being*” does not always enable one to define their object. For it is indeed the case that, in this respect, a mammal is no different from a rock. What distinguishes the biological from the mineral is not “*being*”, it is “*life*”. The ontology of the life sciences is therefore faced with two main challenges. Firstly, it has to identify, among all the entities, those that are but that never exhibit a fully

stabilized form; in other words, it has to establish an ontology of “*becoming*”, and not an ontology of “*being*”. Secondly, it has to avoid reducing becoming to a succession of states, and to grasp it as a set of processes that are mostly undetermined. This is the condition that has to be fulfilled so that the ontology of becoming respects the specificity of life, namely that it exceeds any alleged natural order or *a priori* laws of change.

Accordingly, what is living cannot be the mere execution of a program; it is not the completion of a plan; on the contrary, it implies, because of its becoming and evolution, a history. These three features are at the heart of Prof Anne Fagot-Largeault’s series of lectures for this year. The talk of Denis Duboule enables one to grasp those in the light of the most recent developments in experimental biology and developmental genetics.

What is living is not the mere execution of a program. This is obvious both with respect to evolution and development, as the

famous problem of the primacy of the egg or the hen illustrates: from the perspective of the evolutionary sciences, the egg necessarily comes first because cells come before complex beings; for the sciences of development, the egg also takes precedence over the mature individual because it is the *variations* occurring during its development that give it its singularity. The ontological primacy of the cell over the organism implies the rejection of a preformationist doctrine, for living beings – be they men or mice – share the same basic biological mechanisms; this primacy also challenges any reductionist ambition that would try to search in the gene for a code of the living, for it implies the paying of some attention to individual variations. This lack of a “code” appears in a striking manner in the way “architect genes”, also known as HOX genes (which are the object of Denis Duboule’s research), work. Duboule has shown that these genes do not code for a particular action, but that they regulate the construction of elements of living beings as diverse as organs and

extremities. This “pleiotropy”, or multi-functionality, of “architect genes” shows that the variations characteristic of living beings cannot be reduced by genetic reductionism because, as Denis Duboule explains, “each time nature produces an innovation, it has not produced at the same time the genes to create this innovation, but went on to search for already existing genes”.

What is living is not the completion of a plan. This approach shows to what extent the epistemological status of the sciences of development and that of the sciences of evolution differ: the sciences of evolution are interested in the phylogenetic problem of knowing *why* a certain form of life has been selected, whereas the sciences of development focus on the ontogenetic problem of knowing *how* individual organisms have been constructed. Through the study of species, evolution develops a retrospective view in order to understand selection processes and appears, *in fine*, as a *gradualist doctrine* of the adaptation of what is living to its environment. Denis Duboule emphasizes the fact that evolution is, at the end of the day, “politically correct”, to the extent that it inserts what is living into a linear process that seems, at least retrospectively, to follow a certain direction. On the contrary, the sciences of development are interested in the singular traits of individuals, which are to be explained in a mechanical way; they develop a *saltationist approach* according to which the embryo indeed appears to be the “material” of evolution, but through spontaneous, random and non progressive modifications. Accordingly, experimental embryology belies the idea of a gradual, linear progression of a given species to the form that is most adapted to its environment. Denis Duboule has shown this in his study of the development of the extremities of forelimbs in the embryo. By identifying and alternatively activating and deactivating the

architect genes involved in that kind of development, he has demonstrated that the pentadactyly we observe in rats today is neither the result of a gradual transformation from one to five fingers, nor even a necessary result with respect to the functional adaptation of what is living to its environment. The developmental perspective enables us to consider that not everything is perfect in nature, but that any organization results from an equilibrium, a compromise: what matters in an organism is the coordination of functions, not their perfection; this requirement of coordination implies that the driving force in development is not the notion of “gradual perfection”, but that of “internal constraint”.

What is living implies a history. The functioning of HOX genes also enables us to conceive how it is possible that a “solution of continuity”, that novelty might emerge from such a recursive phenomenon as development. That is an aspect of the problem also addressed in Prof Fagot-Largeault’s series of lectures, under the head of the “ontological enrichment” characteristic of living beings. From the perspective of the biological mechanisms of development, the conditions of such an emergence are most notably due to the fact that the margin of error in the action of architect genes increases when the functions become less and less vital for the growing organism. As far as embryology is concerned, this “imperfection” has to be considered the condition for the appearance of individual variations during ontogenesis. This form of biological inventiveness of what is living enables one to imagine, thanks to a “transitionism”, a way of reconciling the gradualism of evolution and the saltationism of development. Such a transitionism indeed tends to give some scientific credentials to the trivial affirmation according to which the evolution of species finds its substratum in the differentiated

development of individuals. But it also conceals a dreadful scientific challenge behind the seeming simplicity of the project of integrating the recursive phenomena of development into the linear process of evolution. Embryology, at its own level, achieves this integration by postulating that one can use experimental means to go up the chain of evolution by selectively inhibiting the action of architect genes; by doing so, we would be able to objectify the “mechanical basis” of evolution.

But a complete and enduring synthesis of evolution and development (*evo-devo*) seems quite difficult to conceive. First of all, massive oppositions seem to result from their epistemological divergences, for instance with respect to the role of selection pressures: do they bear on the parts of living beings (external constraints) or on the organism as a whole (internal constraints)? But Denis Duboule also focuses on another problem that seems to him to be at the heart of biology: that of the temporal frames of reference proper to the sciences of development and to the sciences of evolution. To insert the recursive nature of development into the linearity of evolution would require a “complete mastery” of the way of integrating these various temporal frames of reference, but we “have absolutely no clue” about such an integration. We must therefore rest content (at least for the time being) with gaining additional knowledge and with trying to improve our control over the “time” of development and the “time” of evolution taken in isolation. ■

Jean-Claude K. Dupont

*This lecture can be downloaded from the
Collège de France Website.
Page of Prof Fagot-Largeault*

Elaine FUCHS

Professor at Rockefeller University, New York (United States)
invited by the Assembly of the Professors on the proposition of
Prof Christine Petit

She has given in January 2008, four lectures entitled:

1. Stem Cells: Biology, Ethics and Potential for Medicine
2. The Biology and Genetics of Skin and Hair
3. Cell Adhesion, Migration and Cancer
4. Stem Cells of the Skin and their Lineages

Elaine Fuchs pioneered the field of research on hereditary skin disorders. She also initiated the characterization of dynamic cell balances in this tissue and of the underlying molecular mechanisms. Then, this research prompted her to investigate stem cells present in this particular tissue as well as to study the onset of malignancy in the skin. She is member of the American National Academy of Sciences.

Lecture 1: Stem Cells: Biology, Ethics and Potential for Medicine

The remarkable ability to generate an embryo from a single fertilized oocyte, to periodically replace dying cells within tissues and to repair tissues damaged during injury, is a direct consequence of stem cells, nature's gift to multicellular organisms. The gold standard of stem cells is the fertilized egg, which produces an organism replete with ~220 specialized cell types, including reproductive germ stem cells. As the embryo first develops, an outer protective shell of support cells, referred to as the trophoctoderm, encases an undifferentiated mass (the inner cell mass) of pluripotent embryonic stem (ES) cells that will make the animal. As tissues and organs develop, stem cells become more restricted in their options (Fuchs et al. 2004; Fuchs 2007).

Although cell type specification is largely complete at or shortly after

birth, organs must possess a mechanism to replenish those cells within the tissue that die or become damaged with age. This process of cell replacement by natural wear and tear is referred to as homeostasis, and is fueled by adult stem cells which typically reside within a tissue. Some tissues, like the skin epidermis or intestinal epithelium, undergo constant turnover and rejuvenation involving the entire tissue. For other tissues/organs, e.g. the brain, it has only been recently that scientists have appreciated the existence of stem cells that have the ability to replenish specialized neurons, glial cells and oligodendrocytes over time, even if this capacity is much reduced in comparison to the hematopoietic system or epithelial tissues. Increasing evidence is pointing to the view that most tissues of the body have adult stem cells.

Like ES cells, adult stem cells undergo self-renewal, the ability to divide to generate self, and the ability to generate cells that will differentiate to produce tissues. Adult stem cells, however, typically give rise to only a few different types of tissues, a feature often referred to as multipotent. Some stem cells, e.g. germ stem cells, are thought to give rise to only one lineage, in this case, either oocyte (female germ stem cells) or sperm (male germ stem cells). Given the fountain of youth ability of adult stem cells to generate tissues during normal homeostasis and wound-repair, these stem cells are typically set aside in protected

reservoirs within the developing tissue. They are often used sparingly, and hence undergo fewer divisions than their activated progeny. The protective niches are composed not only of stem cells but also a complex "microenvironment" of neighboring differentiated cell types which secrete and organize a diverse range of extracellular matrix and other factors that allow stem cells to manifest their unique intrinsic properties (Fuchs et al. 2004; Moore and Lemischka 2006; Morrison and Kimble 2006).

Harnessing adult stem cells for regenerative medicine has long been a major focus of scientists and clinicians alike. Examples of the successful use of stem cells for regenerative medicine include bone marrow transplants to replace cells of the hematopoietic system and cultured epidermal sheets for the replacement of epidermis lost in badly burned skin (Weissman 2000; De Luca et al. 2006). ES cells have received more attention because of their broader potential and hence greater promise for generating cell types to treat injuries and degenerative conditions for which we presently have no cures. With the promise are also ethical considerations dealing with the use of fertilized eggs for research necessary to harness this potential. Scientists have countered with technology referred to as nuclear transfer, often mistakenly referred to as human cloning. This technology involves making a hybrid somatic cell from an unfertilized oocyte



whose nucleus was removed and replaced by an adult somatic cell (Hochedlinger and Jaenisch 2006). In collaboration with the laboratory of Peter Mombaerts at the Rockefeller University, my laboratory has used this technology to demonstrate that ES cells and in fact healthy viable mice could be generated from hybrid diploid totipotent cells, each composed of an unfertilized enucleated mouse oocyte and an adult hair follicle stem cell, normally able to differentiate into only epidermis, hair follicles and sebaceous glands (Blanpain and Fuchs 2006; Li et al. 2007). Although nuclear transfer technology has not yet been successful for generation of human ES cells, scientists recently succeeded in generating primate ES cells through nuclear transfer (Byrne et al. 2007).

Can adult skin cells be utilized to generate ES cells directly, without the use of an unfertilized oocyte? Breakthroughs over the past year

have led scientists to predict that this may be possible in the future. In a pioneering study published in summer, 2007, Yamanaka and coworkers reported the generation of germline competent “induced pluripotent stem cells” (iPS cells) generated by retroviral infection of mouse skin fibroblasts to force the expression of four transcription factors normally expressed by ES cells but not by adult somatic cells (Meissner et al. 2007; Okita et al. 2007). Unfortunately, one of the transcription factors was a potent cell cycle stimulator and the mice generated developed tumors with time. Since this time, however, researchers have now succeeded in eliminating this gene from the mix, and now only three transcription factors appear to be sufficient (Nakagawa et al. 2008; Park et al. 2008). Moreover, in animal mouse models of human disease, iPS cells have already shown promise for treatments (Hanna et al. 2007), and in the past several months, two groups have independently succeeded in generating human iPS

cells from adult skin cells (Takahashi et al. 2007; Yu et al. 2007).

This explosion of research bodes well for the future of human regenerative medicine. The challenge now will be how to avoid the genetic manipulation (in some cases, >50 integrated retroviral DNAs) that occurs in generating iPS cells and/or overcoming the present hurdles in generating human ES cells by nuclear transfer. While nuclear transfer is preferable in using epigenetic reprogramming rather than genetic manipulation, it still uses unfertilized oocytes. That said, the excitement and promise of stem cells for regenerative medicine continues to grow and 2007 has been a very successful year in overcoming technological barriers that less than a decade ago were thought to be insurmountable. ■

PRIZES AND DISTINCTIONS

Balzan Prize 2007

Professor Michel Zink

The International Balzan Foundation, based in Zurich and Milan, was created in 1956 by Lina Balzan, daughter of Eugenio Balzan (1874-1953) and heir to his fortune. Eugène Balzan, administrative director and share-holder of the leading Milanese daily *Corriere della Sera*, left Italy under the fascist regime in 1933 and settled in Switzerland.

Every year the Balzan Foundation awards four international prizes, two in the arts and humanities, and two in the physical, mathematical, natural and medical sciences. Every three years it also awards a humanitarian prize.

Since 2001, each of the annual prizes has had an endowment of one million Swiss francs (about 600,000 euros), half of which has to be devoted to research projects and the promotion of science, preferably with the participation of young researchers.

Michel Zink, who received the Balzan Prize in 2007, is the seventh Collège de France professor to be honoured in this way, after Jean-Pierre Serre (mathematics) in 1985, Jean Leclant (Egyptology) in 1993, Yves Bonnefoy (history and critique of the fine arts in Europe) in 1995, Jean-Pierre Changeux (cognitive neurosciences) in 2001, Marc Fumaroli (history and literary critique from the 16th century to the present) also in 2001, and Xavier le Pichon (geology) in 2002.

The prize was awarded to Michel Zink, holder of the Chair of Medieval French Literature at the Collège de France, for his work on European literature (1000-1500), including *his fundamental contributions to the understanding of French and Occitan*



The 2007 winners of the Balzan Prize (Prof Michel Zink, 2nd from the right)

literature in the Middle Ages; his new interpretation of the relation between medieval and modern literature; and his seminal initiatives that have brought the literature of the Middle Ages back into the cultural tradition of France and Europe'.

Michel Zink is author of twenty books on Middle Ages literature, in addition to another twenty books that he co-authored or edited. Over the past two decades he has also created and edited a huge collection of bilingual editions of medieval literary texts in paperback ('Lettres gothiques' by Livre de Poche).

Michel Zink's prize money earmarked for research will be used on three main projects. First, four prizes will be awarded to young researchers in romance philology and medieval literature, to enable them to continue their work in Paris and their training at the Collège de France for one year. The second project is a research programme on 'Circulation of texts, encounters between languages, and literary milieus: around medieval France'. This programme will be punctuated by four international symposiums, two oriented mainly towards

literary history and the other two towards critical thinking. The first, scheduled for 1-3 April 2009 at the Collège de France and the Académie des Inscriptions et Belles-Lettres, will be entitled: 'Reading an old text, from the Middle Ages to the present'. Finally, Michel Zink will use part of the prize money to allocate occasional grants for the publication of medieval literary texts. ■

The Norwegian Academy of Science and Letters awarded the Abel Prize in mathematics for 2008 to John Griggs Thompson, Florida University, and Jacques Tits, Collège de France, for their ‘profound achievements in algebra and in particular for shaping modern group theory’.

The Academy explained this choice (cf. the Abel Prize website) by pointing out that modern algebra is the fruit of two longstanding traditions in mathematics: the art of solving equations, and the use of symmetry, a particularly simple example of which is the tile designs of the Alhambra. These two traditions converged in the late eighteenth century, when mathematicians realized that the key to understanding even the simplest equations lay in the symmetries of their solutions. This understanding was applied brilliantly by two young mathematicians, Niels Henrik Abel and Evariste Galois, in the early nineteenth century. Their work eventually led to the group concept as the most effective way of grasping the idea of symmetry. In the twentieth century the group theory approach was instrumental in the development of modern physics: from the understanding of crystalline symmetries to the formulation of models for basic particles and forces. In mathematics, the idea of groups has proved extremely fertile. The most



Jacques Tits (centre) receives the Abel Prize from His Majesty King Harald in Oslo.

© Heiko Junge/Scapix, The Abel Prize/The Norwegian Academy of Science and Letters

important groups are finite groups, used for instance in the study of permutations, and linear groups, consisting of symmetries which preserve an underlying geometry.

The two laureates’ work is complementary: whereas John Thompson has focused on finite groups, Jacques Tits has worked mainly on linear groups, developing a new vision of groups as geometric objects. In particular, he has introduced the concept of what is now known as a Tits building, which encodes the algebraic structure of linear groups in geometric terms. Building theory is a unifying principle in a surprisingly wide range of applications in mathematics and physics, in combinatorial geometry used in computer science, and in the study of phenomena of rigidity in

spaces with a negative curve. Tits’ geometric approach has been essential for the study and the construction of finite groups. His results have inspired numerous variations and applications.

‘The achievements of John Thompson and of Jacques Tits are of extraordinary depth and influence. They complement each other and together form the backbone of modern group theory’ (source: Abel Prize website).

The Abel Prize, created in 2002 by the Norwegian government, is considered to be the highest international distinction in mathematics. This is the second time that a professor at the Collège de France has been awarded the prize; Professor Jean-Pierre Serre was the first, in 2003. ■

Abel par Johan Gorbitz, 1826 © Matematisk institutt, Univ. i Oslo

Niels Henrik Abel (1802-1829) was a Norwegian mathematician. One of his teachers recognized and encouraged his prodigious talent, and at the age of fifteen he was reading Euler, Gauss and Lagrange. By the time he entered university in 1821 he had already started his work on fifth-degree equations. After his father’s death he had to work hard to support his family. His first article was published in 1823, subsequent to which the government awarded him a grant to finance a stay in Göttingen and Paris, the main centres of mathematical research.



In 1825 he went to Berlin where he met Léopold Crelle who founded a mathematical journal, the *Journal für die reine und angewandte Mathematik*. In 1826 Abel returned to Paris, where the best of his work, a thesis entitled ‘Research on a general property of a very large class of transcendent functions’, was carried out at the Paris Academy.

However Abel, still unknown at the time, was treated with little consideration. Cauchy mislaid the thesis, that he was supposed to present to the Academy, and for the rest of his life Abel thought that his work had been

lost. Weary and short of money, he returned to Norway where he learned that he had tuberculosis. Notwithstanding his precarious financial and professional position, he published in Crelle’s journal a series of treatises on algebraic equations, elliptical functions and infinite series, thus opening new avenues in each of these domains. At the same time as Jacobi, he created the theory of elliptical functions. Abel died on 6 April 1829 at the age of 27. Two days later it was announced in Paris that his thesis had been found. The Academy awarded him posthumously its grand prize for mathematics.

ON AUTHORITY

COLLÈGE DE FRANCE AUTUMN SYMPOSIUM

18 AND 19 OCTOBER 2007

The seventh Collège de France autumn symposium was held on 18 and 19 October 2007. The event, on a topical subject of interest to all the disciplines represented at the Collège de France, bore witness to the universality of the institution's teaching and the collegiality between its professors. This year slightly under half the participants were from the Collège while the rest were French and foreign guests. For two days they discussed the concept of authority.

'Authority. Right or power to command, to be obeyed.' From antiquity to our contemporary world, in all cultures, authority – sovereignty, the sacred, books, dogma – has underpinned the social order. In his fine chapter on authority in *Le Vocabulaire des institutions indo-européennes*, Emile Benveniste – for a long time a professor at the Collège de France – reminds us that the term *auctoritas*, the abstract derivative of *auctor*, comes from the verb *augeo*, which in classical Latin means 'to increase, to augment'. In the Middle Ages the author was the one who amplified the heritage of the ancients, but Benveniste deemed this link to be insufficient. How can the strong political and religious meaning of *auctoritas* be connected to a mere increase?

In Indo-Iranian the root *aug-* denotes strength, especially divine strength, 'a power of a particular nature and effectiveness, an attribute of the gods'. In old usage of Latin, *augeo* meant not the fact of increasing but the act of producing outside of oneself, the creative action that gives rise to; hence, the privilege of the gods and natural forces, not of humans. This explains the eminent value of *auctoritas*: a demiurgic act, a quality of the senior magistrate, the validity of the testimony, the power of initiative.

Nulla auctoritas nisi a Deo, goes the medieval saying taken from Saint Paul: 'There is no authority except from God'. But today, is there not constantly a question of a crisis of authority, at school, in parliament, in the courts, and even in science? In virtual space there no longer seems to be any authority at all. On what can the authority of the twenty-first century be based?

Authority is everywhere and nowhere. Law, philosophy, religion, political science, economics, sociology, and of course the exact sciences: all our knowledge has been questioned with regard to the function that it has attributed and still attributes to authority, as well as the need for authority or the consequences of the lack of authority.



Prof Antoine Compagnon

Pierre Mazeaud, former chairman of the Constitutional Council, opened the symposium by describing moral authority – based on the traditional distinction between *auctoritas* and *potestas* – and the legal authority of the Constitution, and then analysing the current plans to amend the Constitution. Guy Canivet, until recently presiding judge of the Court of Cassation, now member of the Constitutional Council, closed the seminar by discussing the current state of the authority of the courts, and describing the evolution from an imposed justice to a negotiated justice in France. The proliferation of independent authorities, another tendency that is transforming the power of the state, was examined by Louis Schweitzer, president of the HALDE (the High Authority to combat discrimination and promote equality), and by Joël Ménard, former director of public health, currently president of a



think-tank set up to devise an 'Alzheimer Plan'.

With regard to more traditional forms of authority, anthropologist Carlo Severi from the Ecole des Hautes Etudes en Sciences Sociales (EHESS) noted that in certain societies, authority is based on an oral tradition, unlike the Western model where authority, text and tradition seem to be inextricably linked. Jean-Marie Durand from the Collège de France argued that, contrary to received ideas, in Mesopotamia royal authority, which inspired fear or respect, was not absolute but bounded in many ways. Thomas Römer from the University of Lausanne discussed the constitution of the canon of the Hebrew Bible and described the transition from royal authority, with its limits, for example the prophets, to the authority of the text, always subject to interpretation. Michel Zink from the Collège de France spoke about the subtle link between authority and age in the Middle Ages, which allowed for the whole range of role games, from the simple copyist to the original writer.

Jacques Bouveresse, also from the Collège de France, contended on the basis of Wittgenstein's reflection in *On Certainty*, that 'authority is unthinkable without belief'. Even in science, knowledge is based on authority: 'I know' means that I have been taught and that I have been convinced. The result is a paradox of authority in democracy, for authority cannot explain itself, does not have to provide reasons.

Hence, reflection on the ethics of science, whose progress requires recognition of authority.

Catherine Audard of the London School of Economics (LSE), focused her philosophical thinking on the internalization of moral standards, overturning the Kantian problematic of the autonomy of moral doctrine: even if the moral authority of the norm is impossible to establish, it is nevertheless possible to understand it by analysing the agents' motives.

From a political philosophy point of view, based on Plato but also on his own experience as a former director of education, Bertrand Saint-Sernin from the Sorbonne showed how authority or the ability to make oneself obeyed is based on consent and persuasion rather than constraint and subjection, and therefore implies the experience of obedience before that of command. Treating decision-making from a very different point of view, Jonathan D. Cohen, experimental psychologist from Princeton, reported experiments which illustrate the intervention of emotive centres of the brain in rational decision-making.

Science has been a counter-argument to authority, but there is an authority of science and authority in science. How is consensus built in research? How is scientific authority defined? What subjection does it require? What opposition does it allow? These are the types of question that several scientists raised, starting with Xavier Le Pichon, Professor of Geodynamics

at the Collège de France. He discussed the stormy debates that shook the scientific community in the sixties, when the theory of tectonic plates had been proposed but had not yet prevailed. Prof Le Pichon, who had participated in those controversies, compared them to the ones currently dividing scientists over the greenhouse effect. Jean Bricmont, physicist at the Catholic University of Louvain, examined the trust that we can have in science, and compared it to religious faith, also in crisis. How can growing numbers of sceptics and relativists be convinced of the authority of science? Probably by means of its applications. But is it not the scientific community itself, through its procedures of legitimization, for instance in the leading scientific journals, who guarantee the validity of science – unless the scientific community's neutrality is questionable, for example due to its sources of funding? Edouard Brézin, physicist at the Ecole Normale Supérieure, considered the relationship between knowledge and belief, the mistakes and cases of fraud that have undermined the authority of science, and the need to combat the current mistrust of it.

The social sciences' also had their say. In *The Politician and the Scientist*, Max Weber distinguished three types of authority: first, that of tradition, the authority of 'the eternal yesterday', the 'morals sanctioned by an immemorial validity and by the habit of respecting them'; second, authority which is legalistic or rational, based



on ‘belief in the validity of a legal codification and objective “competence” founded on the application of rules instituted rationally’; and, finally, charismatic authority, based on “the personal grace of the extra-ordinary”’. Pierre Rosanvallon of the Collège de France noted that two invisible social institutions – authority and trust – are declining today. But authority, by shifting the constraints of the political towards the religious, founds a power which requires neither coercion nor persuasion to prevail. Hence, the contradiction of democratic authority, which demands argumentation and self-foundation. The general will as a principle of legitimacy based on election justifies the power of social generality embodied in the republican idea of public service. This idea is in crisis in a democracy which is calling for proximity and participation, and redefining the conditions of the exercise of power on the basis of this requirement. Two other professors of the Collège de France, Henry Laurens, historian of the Arab world, and Roger Guesnerie, theoretician of economics, examined two cases of this contemporary crisis of authority: the shareholding company and the Palestinian Authority – two very different cases but which both illustrate the profound change of authority in contemporary societies.

TITLES OF INTERVENTIONS

- *L'autorité de la Constitution*, Pierre Mazeaud
- *Les métamorphoses de la légitimité*, Pierre Rosanvallon
- *Ce qui rend impératif les énoncés de la tradition: une analyse pragmatique*, Carlo Severi
- *Auctor et auctoritas au Moyen Âge*, Michel Zink
- *L'éthique de la croyance et la question du “poids de l'autorité”*, Jacques Bouveresse
- *Comprendre l'autorité des normes morales*, Catherine Audard
- *L'adoption d'une théorie scientifique: la tectonique des plaques, l'effet de serre*, Xavier Le Pichon
- *Autorité et décision*, Bertrand Saint-Sernin
- *Interactions entre émotion et cognition dans la prise de décision*, Jonathan D. Cohen
- *Comment justifier l'autorité scientifique?*, Jean Bricmont
- *Sciences de la nature et théorèmes mathématiques*, Édouard Brézin
- *Les limites de l'autorité royale en Mésopotamie: la coutume, les Anciens, les tabous, les demandes des dieux*, Jean-Marie Durand
- *L'origine du canon biblique et l'invention d'une autorité scripturaire*, Thomas Römer
- *La suprématie des actionnaires en question*, Roger Guesnerie
- *L'autorité sans État: les Palestiniens depuis l'entre-deux-guerres*, Henry Laurens
- *Qu'est-ce qu'une haute autorité indépendante?*, Louis Schweitzer
- *L'autorité médicale*, Joël Ménard
- *L'autorité du jugement*, Guy Canivet

The interaction of disciplines was perfect at this symposium, the proceedings of which will be published shortly. ■

Prof Antoine Compagnon

This autumn symposium organized by a scientific committee of professors of the Collège de France is part of a series of interdisciplinary symposia, funded by the Hugot Foundation, on topical issues in today's society. The proceedings of these symposia are published by Odile Jacob.

Symposium downloadable at: www.college-de-france.fr news and events section.



THE ECOLOGY OF PERCEPTION AND THE AESTHETICS OF LANDSCAPE

26-27 March 2007
International workshop co-organised
by the Laboratoire d'Anthropologie
Sociale and the University of
Aberdeen

The aim of this two-day workshop was to facilitate a dialogue between different approaches to the aesthetics of landscape in social sciences, mainly between British and French traditions in anthropology and human geography. Rather than a synthesis between the symbolist approach more prevalent in France and the rather more phenomenological British approaches, the seminar pointed out the apparent incompatibility of these two theoretical poles. The potential misunderstanding between both traditions is probably increased by the lack of diffusion and awareness of French writings on the subject among Anglophone academics.

The notion of landscape (or *paysage*) often appears as a Western category related with notions of nature and wilderness. This painterly aesthetic is defined by the observing subject who is distant from the world 'out there', as instituted by perspectival art. In fact, as the geographer A. Berque stressed in his presentation, a similar form of *artialisiation* or 'aestheticisation' of the environment already existed in China well before its emergence in European renaissance art. Yet, despite the formal similarity of artistic representations, the cosmological and ontological conceptions of the environment are quite different in the Chinese and European traditions. Thus, for anthropologists, the question arises of how to link in each ethnographic context the forms of artistic depiction and the ontological relationships they express.

The participants therefore confronted different approaches of the aesthetics of the environment, whether or not these unfold within a scenic landscape perspective (*perspective paysagère*). The discussions underlined the divergence in

the uses of the notions of landscape/*paysage* and the misunderstandings between phenomenological approaches – where landscape and environment are practically synonymous (C. Tilley, G. Scheldeman) – and the positions which restrict the notion of landscape to a definition based on a limited number of criteria, the emergence of which is historically situated (A. Berque, P. Descola). Thus, in the English common usage 'landscape' refers most often to the geographical notion of 'milieu', whereas the French '*paysage*' corresponds to one of the possible forms of mediation in relation to the milieu (what Berque coined as 'cosmophany'). Beyond linguistic differences, this divergence is grounded in different initial assumptions and, more generally, to what P. Descola saw as inverse epistemological movements in French and British anthropological practice, from philosophy towards ethnography in France and vice-versa in Britain.

It is precisely the idea of a mediation which the phenomenological approaches reject, leading in some cases to radical positions, such as Tilley's 'phenomenological walk' as a method to understand past societies' relation to the landscape (as surroundings) through the direct experience of walking.

Most participants of the seminar treaded intermediate pathways between these diverging positions by distinguishing between the scenic aesthetics (*paysage* in a restricted definition) and other modalities of appreciation of the surroundings. Aesthetic perceptions and conceptions of the environment are not necessarily visually based. This brought both F. Myers and T. Ingold to favour the notion of 'poetics of landscape' to that of aesthetics. The appreciation of the surroundings can be based on all the senses and can also be normative in a moral sense, as the example of the Nepalese forest shows, where the

aesthetic judgements of its beauty vary according to the different uses of the forest (A. Nightingale).

Furthermore, different forms of relationships to the surroundings are known which combine both appreciation in general and aesthetic representations in particular without implying a scenic landscape perspective as such, with its distancing between the subject and the milieu. This is the major difference between Chinese and European landscape painting. The 'proto-landscape' (*paysage en gestation*) of the Hopis' architecture and ritual aesthetics probably counts among these alternative scenic landscape perspectives (P. Pérez).

Conversely, the activity of the landscape painter is itself embedded in phenomenological experience. Hence, according to Ingold, the need for an understanding of the activities of representation – be it the artistic representation or the anthropological rendering of the field – as standing in continuity with phenomenological experience, and not in disjunction with it, as is usually assumed. The memory of such experiences would then be the base of the mechanisms by which representations of the environment are stabilised, thus hinting at a possible meeting point between representational and phenomenological approaches of the perception of the environment. ■

Nicolas Ellison

Held at the *Collège de France*, this workshop was the third of a series entitled *Landscape beyond land* under the coordination of A. Arnason, N. Ellison, J. Lee-Vergunst and A. Whitehouse and financed by the Arts and Humanities Research Council (more at www.abdn.ac.uk/anthropology/landscape_seminars).

The book *Landscape beyond Land* is currently being prepared with Berghahn publishers along with a special issue of the journal *Ethnos*.

THE PRESENT DAY TRANSFORMATION OF RITUALS IN THE TIBETAN AREA

International conference
8-9 November 2007
Collège de France and Site Descartes
of the Ministère de l'Enseignement
Supérieur et de la Recherche

Co-organized by the Centre de Recherches sur les Civilisations Chinoise, Japonaise et Tibétaine (UMR 8155), the École Pratique des Hautes Études (Section des sciences religieuses) and the Institut des Études Tibétaines (Collège de France), and under the overall supervision of Katia Buffetrille (EPHE, Section des sciences religieuses), this conference brought together fifteen researchers from various European and American institutions (EPHE, CNRS, EFEO, University of Lille, Nanterre University, Oxford, Cambridge, Oslo University, Columbia University, University of California).

For the past several years, researchers of the UMR 8155 have been studying the dynamics of ritual. In the case of Tibet, this endeavour has been quite fruitful, even if these studies are far from complete. Ritual has an intrinsic social dimension to it, whether performed on an individual or collective basis. And given that it is repeated at regular intervals, its tendencies are conservative. In spite of some scope for improvisation, a ritual adheres to precise rules that constitute its foundation and determine its efficacy. While rituals develop with the passage of time, they generally do so in a very slow, almost imperceptible manner. Nevertheless, upheavals – whether caused by factors internal or external to the community or society – may bring about important changes in the

form of a ritual, sometimes to the point where the ritual disappears either temporarily or permanently, or else new rituals are born.

In Tibet and in the wider Himalayan region, this process has already been studied extensively. Following the occupation of the country by the PRC, the religious, political, social and cultural life of Tibet underwent sweeping changes, while at the same time

Tibetan Buddhism spread far beyond its borders – as far as the Western countries where Buddhist masters went into exile. From the beginning of the Cultural revolution (in 1966) to CCP General Secretary Hu Yaobang's visit to Tibet (in 1980), religious activities were banned completely in the Land of Snow. The liberalization of the 1980s allowed numerous rituals to reappear, if often only in an abbreviated or



* Prayer flag (*lungta*) bought in Amdo (today's Qinghai, a north-eastern province of Tibet) in 2002. This flag, a modern piece, represents the seven attributes of the Cakravartin: the wheel, the gem, the queen, the minister, the elephant, the horse, and the general. The horse carries the gem which fulfils all desires and is surrounded by the eight auspicious symbols.

altered form. More recently, other agents of change have also affected the Tibetan Autonomous Region and neighbouring regions as these open up to modernity (mass tourism, globalization, etc.), not to mention the influence exerted locally by political forces.

The gathering of researchers from different backgrounds at the conference made for interesting interaction on ritual and its transformation both within Tibet proper and in the areas under Tibetan cultural influence.

The papers presented by the contributors covered a wide geographical area: Tibet, Nepal, Sikkim and Mongolia. While all papers confirmed the importance of rituals in the areas in question, they highlighted once again the need to agree how the term “ritual” is to be understood, and to continue exploring the semantic field of Tibetan ritual. Emphasis was placed on the social, economic and political changes in the countries focused on, and the influence of such change on rituals:

religious freedom in Mongolia since the democratic transition in 1990, the emergence of the Maoist movement and the “people’s war” that drenched Nepal in blood from 1996 to 2006, the settlement of Tibetan refugees in Nepal, the migration of certain Nepalese population groups, the religious liberalization in Tibet, and Buddhism’s confrontation with Western ideas (feminist discourse, for example). The rituals considered can be grouped under three tendencies: a strict adherence to tradition, an impoverishment of tradition, and a deviation from tradition’s original meaning.

All in all, the papers showed how limited the transformations of rituals have been, in spite of the considerable changes that have occurred in their social environment – which means that caution in the use of terminology is called for. The question was raised, for example, of just how adequate the term “transformation” is. If transformation does indeed occur, what is its precise nature? What does it change: the form of the

ritual, its meaning, its function, its structure? Is there transformation that is specific to the present time?

The quality of the discussions among the participants testifies to the interest generated by the topic. The subject deserves to be dealt with in a wider context involving other geographical areas, with variations in the disciplinary approaches as needed.

The conference proceedings will be published in 2009. ■

Katia Buffetrille

BERGSON'S *L'ÉVOLUTION CRÉATRICE*, 100 YEARS LATER (1907-2007) EPISTEMOLOGY AND METAPHYSICS

International symposium to close 'Bergson Year'
23-24 November 2007
organized by the Collège de France and the École Normale Supérieure with the support of the Société des Amis de Bergson and the Fondation Hugot of the Collège de France



L'Évolution créatrice was published in 1907 when Henri Bergson was a professor at the Collège de France. This venue, associated with the École Normale Supérieure where the philosopher was trained, was therefore a natural choice for commemorating the centenary of the publication of his major work. Natural, but risky, for it would have been tempting to take advantage of the occasion to unconditionally praise and celebrate a national "monument" – one who had known glory during his lifetime, drawing memorable crowds to his lectures, as Pierre Corvol, Administrator of the Collège de France, noted at the opening of the symposium. But that was not the case, which actually is not surprising, considering that Bergson's work triggered stormy debate from the start, earning him the most intense admiration but also the harshest criticism. Bertrand Russell's sarcastic comments on *L'Évolution créatrice*⁽¹⁾ come to mind here: "from the beginning to the end of this book there is not a single reasoning, and therefore not a single bad reasoning; it contains nothing but a poetic painting that appeals to the imagination".

What has become of Bergson a century later? *L'Évolution créatrice* is

now a classic in French philosophy. From a biological point of view, it relates to a period in science that belongs to the past. The spiritualist fever has died down, and the critiques are less devastating, for Bergson's theses are no longer at the centre of contemporary debate.

A variety of epistemological approaches to Bergson's work were presented on 23 November at the Collège de France, ranging from ardent admiration to the reserve of those who demanded the right to make an assessment, and the cold observations of those with an outsider's view of philosophy. The following are necessarily partial glimpses of the day's proceedings.



Prof Anne Fagot-Largeault

Anne Fagot-Largeault described the way in which Bergson conceived of relations between philosophy and science, pointing out the fact that science was his reference. He wanted philosophy to have the same precision as science, and demanded 'certainty for philosophy, as for science' – an ambition that today seems somewhat naïve, commented Professor Fagot-Largeault. 'Constituting metaphysics in science, with the same certainty and universal recognition as the others' was Bergson's project. He believed that by studying scientific facts, certain philosophical doctrines could

be refuted and others promoted. As a philosopher of intuition and duration, he bound them inseparably to the dualism of substances, which he never denied. This is what led him, largely unjustifiably, from the study of intellectual operations, in the realm of psychology, to the assertion of the independent reality of the mind, that he claimed was the foundation of that same intellectual activity.

While Anne Fagot-Largeault showed how Bergson's epistemology was based on metaphysics, Jean Gayon, philosopher and historian of biology, focused more specifically on the influence of Bergson's ideas on the biologists who founded the synthetic theory of evolution, the evolutionist orthodoxy of the twentieth century. According to Gayon, in 1907 Bergson conferred on biological evolution 'the dignity of a philosophical object': 'mechanism had Descartes and Leibniz; evolution had Bergson'. Reviewing the main artisans of neo-Darwinian doctrine, he noted that those who cited the philosopher – usually the most sensitive to his spiritualist tendencies – retained above all the most general theses, referred to only in passing; that few of them had taken him seriously enough to discuss his theses from a scientific point of view – even briefly –; and that none of them had been an unconditional admirer. Bergson had the merit of explicitly defending the idea that evolution was a fact, and of trying to attach philosophy to facts. He wanted a positive metaphysics that could be rectified by experience. But remarkable as it was, his scientific knowledge did not enable him to perceive the dawning of the genetics revolution that was to change biology completely.

1. B. Russell, 1928, *Skeptical Essays*, London: George Allen & Unwin.



Prof Armand de Ricqlès

Armand de Ricqlès also expanded on this aspect, pointing out that *L'Évolution créatrice* was a book haunted by a huge absence: that of genetics. He reminded us that the French scientific community had been very hostile to nascent genetics in the early twentieth century, due not so much to prevailing Lamarckism as to its opposition to Mendelism. Paradoxically, French biologists, attached to materialism, refused the particular character of heredity because they suspected this idea of being tainted with spiritualism. In this context, *L'Évolution créatrice* did not appear as a satisfactory explanation of evolution and its mechanisms. It nevertheless had a strong influence on certain fields of French biology, especially paleontology. Bergson's work moreover had the advantage of making the contradiction between the Holy Scriptures and scientific data seem less outrageous to a large audience of believers. Should we conclude that it was beneficial for evolutionary biology? Armand de Ricqlès' answer is clearly negative. The 1907 book contributed to leading French evolutionary thinking away from genetics and from the reconciliation between Darwinism and population genetics that was to lead to the synthetic theory of evolution. In a sense, *L'Évolution créatrice* officialized the entry of French biology into the transformism crisis that was to last for 40 years and the effects of which are still felt today.

Arnaud François examined the same question from a philosophical point of view and tried to explain, on the basis of Bergson's scientific sources, why the philosopher had missed this genetic watershed even though he had so conscientiously informed himself about the biology of his time.

Bergsonian epistemology was considered from other angles as well. Henri Hude looked at invention in Bergson's work. Professor Dong-Hyun Son, a Korean philosopher, showed how Bergson could be viewed as a precursor of evolutionary epistemology. Paul-Antoine Miquel, comparing Bergson to Darwin, showed how their conception of evolution contrasted with strictly mechanistic and adaptationist versions like – according to Miquel – that of American philosopher Dan Dennett, which made way to anthropomorphism and considered the world, nature and evolution as 'good machines manufactured by good geniuses'.



Hee-Jin Han

Hee-Jin Han, another Korean guest-speaker, undertook to set *L'Évolution créatrice* in the French vitalist tradition, by examining Bergson's theses in relation to those of Paul-Jospeh Barthez. He compared the *principe vital* ('vital principle') developed by Barthez in Montpellier in the eighteenth century, to the *élan vital* ('vital impulse' or 'life force') that contributed so much to Bergson's fame.

François Azouvi focused on the latter point. He examined the reception of *L'Évolution créatrice* between its publication and the beginning of the Great War, as well as the success of the *élan vital* concept. Even though professional philosophers often had reservations about this concept, its emotional force, which gave it the strength of a myth, guaranteed its success among a very wide audience, especially Catholics. Azouvi concluded that the success of the *élan vital* concept tells us a great deal about French society before the First World War, and affords us a glimpse of the 'anti-egalitarian, anti-democratic, anti-rationalist aspiration' in large intellectual and cultural communities at the time.



Prof Alain Berthoz

Alain Berthoz (Chair of the Physiology of Perception and Action) showed how some of Bergson's intuitions concerning mental life, memory, perception, etc. have been confirmed by contemporary neuroscience and physiology, or could provide them with fertile inspiration. Even though Bergson's metaphysics, and his conviction that the brain could not be the seat of the properties of the mind, contradict the foundations of neuroscience and the idea that the faculties of the mind lie within the processes of the brain, one has to recognize the fecundity of the philosopher's intuitions and the remarkable



Prof Alain Prochiantz

convergences which, with hindsight, appear between some of his theses and contemporary scientific findings.

Finally, Alain Prochiantz, refusing to condemn Bergson for spiritualism and

vitalism, showed the strength of his critique of intelligence. He proposed that we read *L'Évolution créatrice* as a theory of knowledge which rehabilitates instinct and intuition as a knowledge tool complementary to logic. Intuition provides a real affordance for grasping life forms which, because they are constantly moving, are a challenge to intelligence that sets forms. As Bergson said, 'the form is simply a snapshot taken of a transition'. One has to think movement to think evolution and the creation of unpredictable newness that, from an evolving animality, led to the definitive separation between humans and animals. Bergson, read by Prochiantz, is close to Pascal, and



François Azouvi

invites us to 'think our uniqueness, and therefore our solitude'. ■

Marc Kirsch

The talks delivered at this symposium can be listened to on the Collège de France website.

23 november 2007

I. Epistemology at the Collège de France

- Anne Fagot-Largeault – Le philosophe et la science selon Bergson
 Jean Gayon – L'épistémologie bergsonienne
 Dong-Hyun Son – Bergson, précurseur de l'épistémologie évolutionniste
 François Azouvi – Le magistère bergsonien et le succès de l'élan vital
 Arnaud François – Les sources biologiques de *L'Évolution créatrice*
 Armand de Ricqlès – Cent ans après: *L'Évolution créatrice* au péril de l'évolutionnisme contemporain
 Paul-Antoine Miquel – Sélection et évolution. L'usage des analogies chez Bergson et chez Darwin
 Hee-Jin Han – L'heuristique du vitalisme: le principe vital de Barthez et l'élan vital de Bergson
 Alain Berthoz – Les théories de Bergson sur la perception, la mémoire et le rire, au regard des données des neurosciences cognitives actuelles
 Henri Hude – L'invention selon Bergson: hypothèse et intuition
 Alain Prochiantz – La forme n'est qu'un instantané pris sur une transition (Bergson)

24 novembre 2007

II. Metaphysics at the École normale supérieure

- Workshop 1 *L'Évolution créatrice* dans l'histoire de la philosophie. Sources et réceptions (coord. Frédéric Worms)
 Anne Devarieux, Laurent Fedi, Ioulia Podoroga, Hisashi Fujita, Matthias Vollet, Camille Riquier
 Workshop 2 *De L'Évolution créatrice aux Deux sources de la morale et de la religion* (coord. Jean-Louis Vieillard-Baron)
 Anthony Feneuil, Brigitte Sitbon-Peillon, Emile Kenmogne, Petr Tuma, Ghislain Waterlot
 Workshop 3 *La métaphysique de L'Évolution créatrice. Statut du négatif* (coord. Florence Caeymaex)
 Yala Kisukidi, Olivier Moulin, Dimitri Tellier, Yannis Prelorentzos, Antoine Janvier, Federico Leoni
 Workshop 4 *Le problème de la matière dans L'Évolution créatrice* (coord. Arnaud François)
 Pascal Blanchard, Nicolas Cornibert, Joël Dolbeault, Magda Costa Carvalho, Rocco Ronchi

Conférences plénières

- Pete Gunter – Bergson's New Concept of Analysis
 Jean-Louis Vieillard-Baron – Bergson et l'idée de loi scientifique
 John Mullarkey – Breaking the Circle: Élan Vital as Performative Metaphysics
 Roi Tchoe – Une interprétation métaphysique de Bergson: l'âme du *Phèdre* de Platon et la durée bergsonienne
 Arnaud Bouaniche – De la surprise devant le temps à la surprise devant la création
 Florence Caeymaex – Positivité et indétermination. La question du négatif dans la métaphysique de Bergson
 Frédéric Worms – Ce qui est vital dans *L'Évolution créatrice*



Frédéric Worms

GLOBALIZATION: FIGURES AND PROBLEMS

Symposium organized by the Institut du Monde Contemporain
13-14 December 2007
The talks delivered at this symposium, partially reported here, can be listened to in full on the Collège de France website.

The first day of the symposium was devoted to reflection on globalization, pertaining in particular to the issues of governance and legitimacy in law, economics and politics. This reflection was based on a finding common to all three fields, viz. that in today's world, the main economic concepts, political institutions and legal precepts invented to conceptualize the nation state, political regulation, or legal and economic organization, are no longer suited to a rapidly changing international order. In the new international order a wide diversity of institutions has developed, ranging from general assemblies of states, such as the UNO, to specialized organizations such as the WTO, the ILO and courts of justice. All these institutions are currently forced to specify their role, to reconsider their mode of functioning, and to re-establish their legitimacy on a new basis. The aim of this day was to comparatively review the situation. It afforded an opportunity for practitioners and theoreticians to come together to discuss the subject.

In the first talk, Mireille Delmas-Marty pointed out that our societies are facing a new challenge spawned by globalization: how to govern without government, and how to establish the rule of law without the state? In the context of globalization, interdependencies have developed to such an extent that most social debates require solutions – legal and judicial, as well as political and economic – which are both national and international. Debates on sustainable development, the struggle against poverty, and the

protection of health, the environment, biodiversity, security and peace, for instance, all call for answers at national and international level. Prof Delmas-Marty explained that the concept of the rule of law is often ambiguous on an international scale. Instead of firmly establishing the separation of the powers underlying the two principles of the rule of law – legality and judicial guarantees –, international practices tend to be characterized by a confusion of powers.

According to her, an international rule of law can be conceived of only in the form of a legal monster, the product of some kind of hybridization of governance methods and the rule of law. From governance it would have to borrow the art of organizing relations between state and non-state actors who exercise power. But to guarantee its legitimacy and ensure its effectiveness, the monster would also have to draw its inspiration from the methods of the rule of law, so that it can endeavour to subordinate powers to the principles of the law. If this monster is to be viable, it will have to be able to transpose the concept of public power into a stateless international sphere, or to try solutions at the interface of the legal, political and economic fields.

In his talk Pierre Rosanvallon noted that the functioning of democracies is supposed to reach an equilibrium between two forms of legitimacy. The first is the legitimacy of 'establishment' (*légitimité d'établissement*): it is based on suffrage which, at the time of the French Revolution, was designed to achieve unanimity, before being transformed into a principle of majority rule. The second is the legitimacy of 'identification' (*légitimité d'identification*), which is supposed to achieve a form of unanimity or social generality. It has consisted for example in the organizing of a civil service



Prof Pierre Rosanvallon

which structurally embodies the general interest and theoretically serves it. In France, institutions representing the general interest used to be based on a competitive principle of election: the competition or examination was considered as a perfection and even a sort of accomplishment of the idea of election, in so far as it allowed for not only a choice but also an informed choice in which the best, the most competent and the most virtuous candidates were selected.

In its different forms, democracy is considered to be the system which structurally binds and balances the principle of majority decision-making with that of justification by unanimity. This equilibrium disintegrated in the 1980s, and new forms of legitimacy emerged.

Legitimacy 'of establishment' cannot be seen as a possible framework for the legitimacy of international institutions because they have not been established by universal suffrage,



From left to right: Marie-Angèle Hermitte, Mireille Delmas-Marty, Philippe Descola, Roger Guesnerie and François Bourguignon

or else only incidentally. Legitimacy ‘of identification’ is no more appropriate, for there are neither social classes of civil servants nor rational forms of organization that allow for this identification with the general interest. On the other hand, three new forms of power are currently developing, with new types of legitimization. The first form of power is that of independent authorities which fulfil a function of social general interest by keeping at an equal distance from all particularities. The second is that of institutional transformations which have spawned constitutional courts that organize democratic life in the long term. Finally, the third form of power, increasingly central in our democracies, is the return of the question of government, with the emphasis not simply on the organization of public authorities, but also on the virtues and qualities of those who govern: probity, justice, order, benevolence, proximity, attention to singularity, etc. Today’s democracies are defined as governments and not only as regimes. This is a response to citizens’ demand which no longer concerns new forms of institution only, but also qualities of government. These three movements lead to a new definition of the problem of representation.

Pierre Rosanvallon concludes that the social recognition of international organizations is related less to a legitimacy of establishment than to a more functional legitimacy corresponding to the qualities of government and institutional forms that have been presented.



Pascal Lamy

International organizations lack the fact of existing in a public space and making public arguments heard and accessible to the community.

Based on his experience as former European Commissioner, now Director General of the WTO, Pascal Lamy analysed different models of governance and examined the place, in this framework, that can be assigned to the European Union and the WTO. He presented three models

of governance: the nation state, the supranational model, and the ‘Westphalian’ international model. He noted that the difference between the Westphalian model and the one towards which the organizations of international governance have to tend, lies on the path from diplomacy to democracy. The essential ingredient of this path is transparency – what Pierre Rosanvallon calls publicity (*publicité*). Transparency is the raw material of an international democratic system of governance. It is the condition for the exercise of the virtues of regulation and resistance to interest groups. P. Lamy concluded optimistically, contending that systems of governance are driven by a sort of evolutionary law: they evolve with the nature of the problems they have to solve. An evolution of this kind is underway, and it seems that the objective is a democratic system.

The session on 14 December was devoted to the notion of a ‘world public good’. Mireille Delmas-Marty opened the day with a presentation of this concept which appeared a few years ago in the vocabulary of the UN Development Programme and of the World Bank. It denotes a category of goods characterized by two main criteria which are above all economic: first, no exclusion, which means that the goods can be used by everyone;

13 December

Théories et pratiques de la gouvernance: droit, économie et politique

- Gouvernance et État de droit – Mireille Delmas-Marty, Professor, Collège de France
- Les puissances publiques à l’heure de la mondialisation – Jean-Arnaud Mazères, Professor, University of Toulouse
- Le problème de la légitimité des institutions internationales – Pierre Rosanvallon, Professor, Collège de France
- Deux modèles de gouvernance : l’Union Européenne, l’OMC – Pascal Lamy, Director-General of the World Trade Organization
- Gouvernance, marché, mondialisation – Roger Guesnerie, Professor, Collège de France
- Les leçons d’une expérience : le cas de la Banque Mondiale – François Bourguignon, Director, École d’économie de Paris, former *Chief Economist* of the World Bank

14 December

La problématique des biens publics mondiaux

- La patrimonialisation des espaces naturels – Philippe Descola, Professor, Collège de France
- Qu’est-ce qu’une allocation équitable des droits de polluer ? – Jon Elster, Professor, Collège de France
- Intérêt général et droits de propriété intellectuelle en matière pharmaceutique, l’inutilité de la notion de bien public mondial – Marie-Angèle Hermitte, Research Director, EHESS
- Propriété intellectuelle, innovation et climat – Claude Henry, Research Director, École polytechnique
- Biens collectifs et gouvernance mondiale : le cas du climat – Roger Guesnerie, Professor, Collège de France



Prof Jon Elster

and second, no competition, which means that use of the goods by some does not compromise their use by others. The goods in question very often concern heterogeneous issues such as the prevention of contagious diseases, the struggle against climate change, the strengthening of the international trade system and of financial stability, the establishment of peace and security, etc. The underlying idea relates to the notions of a common interest and solidarity. The concept of world public goods can be related to other mechanisms born in the legal sphere. The idea of solidarity free of all links with national sovereignty and territoriality was already germinating in Grotius' work. It was implemented in 1912 in a draft convention on Spitzberg, which contained the three principles of non-appropriation, openness to citizens of all states, and neutrality in wartime. The idea was subsequently adopted, after two world wars and several ecological disasters, under the name 'common heritage of humanity' – a term used in 1967 by the Ambassador of Malta, in anticipation of the third conference on maritime law. It brings to mind several ideas. First, the *res communis* of Roman law, adopted by sixteenth century jurists and theologians and then by the school of natural law, which is opposed to space appropriated as a territory, a symbol of sovereignty. But a 'common heritage' also relates to the notion of trust, found in English common law, which incorporates future interests and confers on the state the duty to manage natural resources in the public interest. The term 'common heritage

of humanity' has been successful: it has been used in a fair number of international documents, including conventions of a restrictive nature, which thus qualify the world's natural and cultural heritage, gradually including, from one text to the next, the moon and other celestial bodies, the ocean and sea beds, the human genome (1997) and, recently, cultural diversity (Unesco Convention, 2003). Through these a specific legal regime is outlined, involving non-appropriation and non-discrimination, as well as the participation of various countries in



François Bourguignon

its management. This concept could have served to link up heritage-related aspects and the realization of a collective good. However, the resistance of states, concerned about preserving their territory and sovereignty, has led to a decline in the use of the concept of a common heritage of humanity. It was notably absent from the manifesto of the first Earth Summit in Rio in 1992, limited to setting objectives for greenhouse gas emissions. On the other hand, the preamble of the Rio declaration states that the Earth, the home of humankind, is an interdependent whole. The text thus contains the seeds of the principle of solidarity, while urging us to seek the realization of the common good through means less openly opposed to states' own interests than that of a 'common heritage'.

We see the appearance of the notion of world public goods, placed under the guarantee of states and

international institutions or even of private actors. It allows for the reconciliation of the concept of territoriality with the interests of the world community. But to strike a balance between the economic, legal and political aspects, one has to be able to legally determine responsibilities, to rank collective preferences in terms of common values, and to harmonize them with fundamental rights external to the market: the right to health and safety, protection of the environment, and so on.

This day's programme was designed in an interdisciplinary perspective, and the topics were chosen to illustrate the diversity both of the objects qualified as 'world public goods' and of the functions of production, access, and management.

Roger Guesnerie concluded the day by examining the case of international institutions working on climate policy. Opposed to the models of policies of quantity, which impose maximum CO₂ emission standards, and price policies which subject CO₂ emissions to a carbon tax, for instance, he analysed possible alternatives and concluded that the establishment of appropriate institutions and of an effective climate policy would be a crucial challenge in the coming decades. ■

Marc Kirsch



Prof Philippe Descola

WITTGENSTEIN: ON IMAGES, LANGUAGE AND MIND

Symposium organized by
Prof Jacques Bouveresse,
(Chair of Philosophy of Language
and Knowledge)
10-11 April 2008

When we ignore what somebody is thinking, or when we do not understand why they act as they do, we sometimes say: “I don’t know what’s going on in his head”. This expression is an image: it is as if thoughts were going on in a box, closed to everybody except its owner. Wittgenstein observes: “The picture should be taken seriously. We should really like to see into his head. And yet we only mean what elsewhere we should mean by saying: we should like to know what he is thinking. I want to say: we have this vivid picture – and that use, apparently contradicting the picture, which expresses the psychical.⁽¹⁾” The contradiction between the use and the picture is the following: on one hand, we use the two expressions, the one which is a picture and the one which is not, in the same way, and we give to them both the same meaning; but, on the other hand, there is something more in the expression which is a picture, since this picture suggests that we should like to see the mental process in the other’s head, as we see her inscrutable face or her mocking smile.

In *La demande philosophique* – the long version of his inaugural lecture at the Collège de France in 1995 –, Jacques Bouveresse comments the quoted remark in these terms: “There is here no more than a picture, which seems actually to contradict our effective use of the expression; but this picture encourages us easily to believe that there exists, in principle and even

perhaps in practice, a possibility to put it in accordance with the use, ie to show in a concrete way the psychological mechanisms which are at work in the head of the thinker and which the picture gives the impression of referring to. When we see how the picture in question is liable to be taken not only seriously – as is right and proper – but also literally by many philosophers of the mind, we can feel at ease about the reality of the ties between the carelessness as to the effective working of the language and some typical forms of intellectual confusion, and, consequently, about the importance of the philosophical reflexions applied by Wittgenstein to such situations.⁽²⁾”

As Bouveresse has already shown in *Le Mythe de l’intériorité*⁽³⁾, the Wittgensteinian criticism of our pictures of the mind – the picture of the “inner”, for example – is concerned less by these pictures as such than by the theoretical constructions which we are inclined to build on them. Forgetting that they are images, we finally attribute to the object that we describe – in the present case, the mind – specific features following from the form of the description that we endorse. As far as the images themselves are concerned, they are *our* images, *our* forms of expression; so, they have “to be taken seriously”. But what exactly does “to take seriously the images of the mind” mean?

A rehabilitation?

The conference *Wittgenstein: Images of the Mind* took place at the Collège de France on the 10th and 11th of April 2008. Its aim was to put to the test a set of ideas about



Jean-Jacques Rosat

the role of images in Wittgenstein’s philosophy in general, and particularly in his philosophy of psychology.

Wittgenstein’s reflection on concepts such as that of picture (*Bild*), model (*Modell, Vorbild*), and representation (*Darstellung*) played as decisive a role at the time of the *Philosophical Investigations* (1936-1945) and the *Remarks on the Philosophy of Psychology* (1946-1949) as at the time of the *Tractatus* (1914-1921). But, against the background of this underlying continuity, a number of changes occurred in his way of understanding and using these concepts.

Moreover, Wittgenstein’s treatment of images underwent significant changes over time. A number of them which had first been considered from a critical point of view were eventually reassessed and rehabilitated. Similarly, his understanding of their fitting into language and their connection with our representations of its functioning changed in the course of his work. Those changes can be brought to light through a comparison between the manuscript sources of the so-called “phenomenological period” (1929-1932) and those of the philosophy of psychology (1946-1949),

1. Ludwig Wittgenstein, *Philosophical Investigations*, trad. G.E.M Anscombe, § 427.

2. Jacques Bouveresse, *La demande philosophique*, éditions de l’éclat, 1996, p. 33.

3. Jacques Bouveresse, *Le Mythe de l’intériorité*, éditions de Minuit, 1976/1987.



Élise Marrou

particularly if we take the latter as a ‘resumption’ (*Wiederaufnahme*) of a number of issues, examples and insights already present in the former. Wittgenstein’s reassessment of the role of images in the second half of the 1940s is conspicuous in his treatment of images of the mind (the inner, the stream of consciousness, the contents of experience, the tapestry of life) and of the functioning of our language (the logical germs, the meaning-body image). Not only does Wittgenstein rehabilitate those images (or, at least, some of their uses), he also shows that they lie at the heart of our most ordinary language games.

A grammar of mind

This conference was part of a series of initiatives taken these last years by the *Chair of Philosophy of Language and of Knowledge* to further understanding of Wittgenstein’s philosophy of psychology and to highlight the fecundity of his so-called “grammatical” or “conceptual” approach to the contemporary philosophy of the mind – an approach based on the analysis of our language games and of the sense or non-sense of certain expressions in a given situation.

A conference organized in 2001 to commemorate the 50th anniversary of Wittgenstein’s death was dedicated to the texts written during his two last years (1949-1951) when, continuing his analysis of psychological concepts, he simultaneously embarked on new reflection on colours and on certainty⁽⁴⁾. In 2001-2002, the annual seminar was the occasion of a debate between the cognitivist, phenomenological and grammatical approaches to the philosophical problems of perception⁽⁵⁾. At the same time, in 2000-2003, Jacques Bouveresse gave three series of lectures on *Perception, Reality and Appearance*, where Wittgensteinian grammatical analysis played an important part, as several chapters of the book derived from them attest⁽⁶⁾. In 2006, the conference *Wittgenstein: Experience and Subjectivity* raised the following questions: “In what way can language, which is necessarily public and common (and possibly scientific), refer to experience (*Erlebnis*), which is supposed to be “private”, inner and subjective? How can we characterize the statements with which we describe, in the first person, our sensations or our visual space, our pains or our emotions? In such statements, what part does the word ‘I’ play? How can its grammar be described? Who says ‘I’?⁽⁷⁾”

The 2008-2009 seminar is entitled *Uses of Wittgenstein*. The purpose is to draw attention to a variety of past, present and possible uses of Wittgenstein’s thought and work. It is not, strictly speaking, to discuss or evaluate such or such an interpretation, but to understand

how some philosophers (Russell, Carnap, Sellars, Anscombe, Kripke, by example), as well as certain writers (like Thomas Bernhard) used Wittgenstein to elaborate their own ideas and work. The aim is also to study how his thought is, or could be, used in various domains (philosophy of religion, philosophy of mind, or anthropology, for example). ■

Jean-Jacques Rosat

Programme

- Wolfgang Kienzler (Iéna): *The psychological concepts from the Philosophical Grammar to the Investigations*.
- Sandra Laugier (Amiens) : *La voix est-elle une image de l’esprit ?*
- Élise Marrou (Paris X & Paris I) : “*L’essentiel dans l’intention, c’est l’image*”. *La figurativité à l’épreuve de l’intentionnalité*.
- Jean-Philippe Narboux (Bordeaux) : *La pensée aux dimensions de l’image*.
- Denis Perrin (Grenoble) : *Ressemblance et synopsis : l’aveugle à la signification comme objet de comparaison*.
- Jean-Jacques Rosat (Collège de France) : *Les paraphrases, images du langage et images de l’esprit*.
- Joachim Schulte (Zurich): *The Life of a Picture*.
- Ludovic Soutif (Paris I) : *L’image du contenu*.
- Edoardo Zamuner (Édimbourg, Melbourne): *Wittgenstein on Perception, Emotion, and Expression*.

4. Jacques Bouveresse, Sandra Laugier & Jean-Jacques Rosat (éd.), *Wittgenstein: dernières pensées*, Agone, 2002.

5. Jacques Bouveresse & Jean-Jacques Rosat (éd.), *Philosophies de la perception. Phénoménologie, grammaire et sciences cognitives*, Odile Jacob, 2003.

6. Jacques Bouveresse, *Langage, perception et réalité. Tome 2: Physique phénoménologie et grammaire*, Jacqueline Chambon, 2004.

7. Several contributions to this conference are available on the website of the Collège de France: www.college-de-france.fr (section: recherche/laboratoire/Prof Bouveresse)

THE NOTION OF FUNCTION FROM LIFE SCIENCE TO TECHNOLOGY

Symposium by Professor Armand de Ricqlès (Chair of Historical Biology and Evolutionism)
21-23 May 2008

This symposium was organized by Armand de Ricqlès (Collège de France) and Jean Gayon (Paris 1 University) in the framework of the Incentive Coordinated Action of the Ministry of Higher Education and Research, entitled 'The notion of function in the human, biological and medical sciences', coordinated by J. Gayon (IHPST, UMR 8590/ Paris 1/ CNRS/ ENS), in scientific partnership with A. de Ricqlès (UMR 8570, Adaptations and evolution of osteomuscular systems/MNHN/Paris 6/ CNRS/ Collège de France), F. Parot (REHSEIS, UMR 7596/ CNRS/ Paris 7/ IHPST) and O. Houdé (Neurofunctional Imagery Group, UMR 6095 CNRS/ CEA LRC 36V/ Paris 5/ Caen University). It brought together thirty-six speakers from eight countries.

The notion of function is one of the most familiar in biology: it encompasses 'what something [the cell, tissue, organ, etc.] does' in the general economy of the organism. In human societies we speak of the function of the doctor, the lawyer, the engineer; in technology, that of a tool (screwdriver) or a complex device (carburettor). These various uses are homogeneous and emphasize the effectiveness or necessity of an element or an agent in the functioning of the entity in which they are incorporated.

Since the Renaissance this notion has constituted a powerful intellectual tool in at least three areas (apart from mathematics): biology and medicine (function of an organic part); technology (function of a tool); and socio-political reflection (economic and social function of an activity). The biological aspects of the concept of function were discussed at the symposium, as well

as the human science aspects (e.g. 'functionalist' psychologies) and the technological ones.

For the biologist, functions appear as direct or indirect results of the arrangement of the structures that serve as their material medium. The structure-function twosome is expressed at all levels of the biological scale and above all in the very term 'to be alive': 'Structures without functions are corpses; functions without structures are ghosts' (Wainwright). The structure-function opposition/ complementarity organizes the classification of the biological sciences, starting with the anatomy-physiology duality. The omnipresence of the concept of function is fairly easy to understand because it implicitly proposes a justification of the data observed, in other words, the hope of a rational understanding of the facts. Referring to function is always giving the beginning of an explanation. The function of a structure, the reason for its presence, is to fulfil a certain role in the (efficient) operation of a system or organism, in a particular physiological or environmental circumstance. Is this the beginning of a rational explanation or the appearance of an explanation? In science an explanation has to be causal: explaining means examining the causes of effects, as the cause must always precede the effect. But in traditional functional explanation there is a paradox: the explanation of the structure, that is, the cause of its existence, lies in the functional effect itself. We therefore have a final explanation and not a causal one, in the sense of the physico-chemical sciences. This is not a problem in technology, where the professed intention is teleological. But the final Aristotelian cause, which switches round the explanation relative to the course of time, is consequently unacceptable for the natural sciences.



Prof Armand de Ricqlès

In biology, explanation in terms of function has often led to the generalization of a more or less avowed finalism, or a more or less shameful one, that we believe no scientist should ever resign him- or herself to.

To avoid a finalistic view of function and to confine themselves to a strict 'functionalism of observation', philosophers and biologists sought an adjustment of this notion for a long time, without much success. It was only in the latter half of the twentieth century that systematic reflection was undertaken on the very sense of the term function and on the value of functional explanations.

Two large families of the conception of function, generally without any finalistic connotation, were identified.

Etiological conceptions envisage function from a fundamentally historical, genetic and evolutionary perspective: function corresponds to a progressively selected activity (which procures a selective advantage) in the continuation of the ancestral forms of an organism. Systemic conceptions of function are a-historical: they do not take into account the genesis of functions in the organism's evolution but account for functions here and now, as

emergent properties that necessarily stem from the organization of the systems in which they are manifested.

These two conceptions correspond to a distinction made by the great evolutionist Ernst Mayr. In an article published in 1961, he showed that there were two biologies with different explanatory regimes: a biology of imminent or immediate causes, and a biology of historical or mediate causes. The biology of imminent causes – those at the level of the living organism – is a functional biology. That of mediate causes – which explains data by reference to the evolution of organisms – is an evolutionary biology. These two biologies are useful for accounting for structural-functional relations but, because of their different relationships with time, their epistemological regimes differ. Functional biology, which is physiological, is an experimental science whose methods are very close to those of the physico-chemical sciences: these are nomological sciences, which formulate general laws. The evidence regime is experimental here: the systemic conception of function is perfectly suited to it.

On the other hand, evolutionary biology, which belongs to paleontology, is an idiopathic or paleontological science, that is, one that studies ‘that which existed only once’ – that is, the entire domain of historical sciences. Rather than experimental demonstrations, these sciences generally resort to demonstration by accumulation of

objects or convergent circumstantial clues. This biology is based essentially on a comparative method which can be used to highlight correlations and thus to suggest inferences or to substantiate demonstrations, but which cannot provide the formal demonstration of a causality, as this property is generally reserved for the experimental sciences. The etiological conception of function has strong affinities with evolutionary biology.

At this point, the explanation of the structural-functional relationship in biology seems intrinsically complex, since it should combine at least two main components, functionalism and historicism, with substantially different epistemological regimes, especially as regards the mode of administration of proof. It is therefore not surprising that we do not have only a single, non-teleological, concept of function.

The congruent relationship between structure and function, obvious in living machinery as in human technology, leads to the key concept of adaptation, so fundamental in evolutionism. Are all organic structures strictly adapted to one or more specific functions? Does any evolving change necessarily take place through the adaptation of structures to functions, that is, by the gradual ‘tracking’ – by potentially modifiable structures and under the control of natural selection – of functions that are increasingly congruent with the conditions of environments which themselves are perpetually changing? Is the

functional plurality of structures, at the price of a sub-optimal adaptation, not the key to evolutionary change?

Topics:

21 May: origin of functional discourse in the life sciences and psychology; philosophical theories of functions; function, selection and adaptation.

22 May: structures and functions in morphology and palaeontology; cognitive structures and functions; functional attributions in experimental biology.

23 May: functions and origins of life; function and dysfunction; functional reasoning in the engineering sciences and the life sciences.

The vitality of the discussions during the symposium and during the conclusions highlighted the interest as well as the current problems and limits of functional discourse in the life sciences, psychology and technology. ■

Prof Armand de Ricqlès

The symposium proceedings will be available shortly in audio on the webpage of Prof de Ricqlès, www.college-de-france.fr



The participants at the symposium

COLLECTIVE WISDOM: PRINCIPLES AND MECHANISMS

International symposium organized by Professor Jon Elster (Chair of Rationality and Social Science) and the Institut du Monde Contemporain, with the support of the Hugot Foundation of the Collège de France 22-23 May 2008

The goal of this conference was to clarify the emergent phenomenon called “collective wisdom,” or “collective intelligence,” or “wisdom of the crowds,” as it can be observed in groups of various size and nature, such as information markets, teams of scientists, juries, political assemblies, and perhaps even democracies themselves.

The conference brought together researchers in human and social sciences who have contributed to clarifying this notion of collective wisdom or have been led by their research to develop an interest in it. Researchers in philosophy, economics, political science, cognitive sciences and sociology have thus examined the notion of collective wisdom. The term “wisdom” was chosen for its generality, presenting the advantage of subsuming more technical notions such as those of “intelligence” or “rationality.”

The first morning of the conference was devoted to examples and a first attempt at defining the general idea of “collective wisdom.” Elen Riot opened the conference by presenting and commenting on the conclusions of the famous 2004 bestseller by James Surowiecki “The Wisdom of Crowds.” Emile Servan-Schreiber explained how information-markets work and why their predictions about verifiable facts (such as election results) can surpass predictions based on polls or expert judgments. Daniel Andler then offered a philosophical reflection on

the three related and distinct notions of wisdom, intelligence, and collective wisdom. Gloria Origgi illustrated the phenomenon of collective wisdom with several examples borrowed from the world of the Internet such as the search engine Google, the collaborative encyclopedic project Wikipedia, and the online market Ebay.

In the afternoon, Jon Elster used the idea of collective wisdom to consider the ideal size, composition, and other relevant features of an epistemically superior constituent assembly. Philippe Urfalino proposed to distinguish between two modes of collective decision within “aeropagus” (or expert committees), viz. apparent consensus and the rule of unanimity. Scott Page then presented the results of his research on the micro-foundations of collective intelligence in terms of aggregation of individual predictions, stressing that individual sophistication and cognitive diversity are equally important in the emergence of the phenomenon. Christian List finally argued that that the impossibility theorems (Arrow’s and those related to what is known as the “discursive dilemma”) often discussed in the social sciences do not necessarily invalidate the idea of collective wisdom, despite the problem of “coherence” that may appear between the result of an aggregation of individuals’ conclusions and the result that can be derived from an aggregation of individuals’ premises.

The second day turned to applications of the idea of collective wisdom in the domain of politics and the law. David Estlund raised questions about the normative foundations of an epistemic approach to democracy and the philosophical reasons that justify limiting or enlarging the pool of decision-makers in a democracy.



Hélène Landemore defended the idea that democracy is normatively desirable because its two main institutions (and probably others as well), inclusive deliberation and majority rule, give it an epistemic edge over any variant of the rule of the few, channeling what Landemore calls “democratic reason” or the collective intelligence of the people. Bryan Caplan then made the exact opposite claim, viz. that democracies tend to do poorly because of citizens’ systematic cognitive biases (in particular on economic issues) thus suggesting the delegation of more decisions to small pools of experts or to the market itself. Gerry Mackie then criticized Caplan’s hypothesis of an uninformed and irrational citizen as empirically unfounded.

In the afternoon, Ariel Colonomos presented the meaning and stakes of the idea of collective wisdom for the discipline of international relations. Adrian Vermeule then criticized the abuse of “many-minds arguments” in legal theory. Dan Sperber and Hugo Mercier finally proposed an evolutionary interpretation of human reasoning as having first and foremost a social function, that of fostering group intelligence rather than individual understanding.

During those two days, several external discussants contributed to the quality of the debates. Be here



Prof Jon Elster



Hélène Landemore



Philippe Urfalino

gratefully acknowledged: Karen Crosson, Arnaud Le Pillouer, Stéphanie Novak, Pasquale Pasquino, Pierre Rosanvallon and Yves Sintomer. ■

Hélène Landemore

Programme

22 mai

Introduction by Jon Elster

Collective Wisdom: Definition and Examples

The Wisdom of Crowds Reconsidered

James Surowiecki, *The New Yorker* (Discussant: Elen Riot)

What has Collective Wisdom to do with Wisdom?

Daniel Andler, *Paris IV, IUF* (Discussant: Gloria Origgi)

Collaborative Filtering: the Wisdom of the Internet

Gloria Origgi, *CNRS* (Discussant: Scott Page)

Deciding, Predicting, Judging

The Optimal Design of a Constitution-making Process

Jon Elster, *Collège de France* (Discussant: Arnaud Le Pillouer)

The Optimal Rule of Decision-making for Areopagus:

Argued Voting or Apparent Consensus?

Philippe Urfalino, *CSTA, EHESS* (Discussant: Stéphanie Novak)

Microfoundations of Collective Wisdom

Scott Page, *Michigan University* (Discussant: Karen Crosson)

Group Deliberation and the Revision of Individual Judgments:

A Social-Choice-Theoretic Perspective

Christian List, *London School of Economics*

(Discussant: Karen Crosson)

23 mai

Collective Wisdom and Democracy

Democracy Counts: Should Rulers be Numerous?

David Estlund, *Brown University* (Discussant: Pierre Rosanvallon)

Democratic Reason: the Mechanisms of Collective Intelligence in Politics

Hélène Landemore, *Collège de France*

(Discussant: Yves Sintomer)

Majorities against Utility: Implications of the Failure of the Miracle of Aggregation

Bryan Caplan, *George Mason University*

(Discussant: David Estlund)

Rational Ignorance and Beyond

Gerry Mackie, *University of California San Diego*

(Discussant: Yves Sintomer)

Collective Wisdom and the Law

The Wisdom of International Decisions

Ariel Colonomos, *CERI, CNRS* (Discussant: Pasquale Pasquino)

Many-minds Arguments in Legal Theory

Adrian Vermeule, *Harvard Law School* (Discussant: Jon Elster)

Collective Wisdom: An Evolutionary Perspective

Reasoning as a Social Activity

Dan Sperber and Hugo Mercier, *CNRS, Institut Nicod*

(Discussant: Philippe Urfalino)

The proceedings can be downloaded from the Collège de France website (Prof Elster's pages) and will soon be available in video on Prof Elster's page: www.college-de-france.fr (co-production Collège de France/ CERIMES)

CLIMATE CHANGE: THE ROLE OF THE SUN AND OTHER EXTERNAL FORCINGS

Symposium organized by
Prof Édouard Bard (Chair of Climate
and Ocean Evolution)
30 May 2008

Édouard Bard, Professor at the Collège de France, explained that the energy flow received from the sun, the 'solar constant' (total solar irradiance), varies on numerous time scales. Since the formation of the sun, some 4.6 billion years ago, its luminosity has increased by about 30%. In its youth the earth's surface therefore received less energy, which probably helps to explain certain periods of extreme glaciation. Closer to the present, in recent centuries, various findings have attested to the variability of the sun's activity. The aurora borealis and sunspots observed since the invention of the astronomical telescope have enabled scientists to demonstrate the existence of a pronounced 11-year cycle, as well as cyclic or irregular variations of dozens or hundreds of years. These variations of solar activity have been related to climate changes in Europe, reconstructed by historians and confirmed by paleoclimatologists. For example, the 'little ice age' from the fourteenth to the eighteenth centuries corresponds globally to a period of weak solar activity (Maunder, Spörer and Wolf Minima), whereas the subsequent global warming is broadly synchronous with an increase in solar activity.

It was however only when sufficiently precise measurements taken by satellites became available, about thirty years ago, that this solar energy flow could be quantified and the variations demonstrated. Total solar irradiance varies by about 0.1% during an 11 year cycle. But the past thirty years of observations have not made it possible to prove

the existence of a pluri-decennial tendency, which at the most would be very limited. That is why the Inter-governmental Panel on Climate Change (IPCC) considers that over the past century the increase in the sun's energy flow has contributed very little to global warming.

Other indirect measurements of solar activity enable scientists to reconstruct phenomena which took place before the era of satellites. The flow of cosmic particles and disturbances of the magnetic field on the earth's surface, both controlled by the sun's magnetic field, can be measured further back than a century. Beyond that, cosmogenic isotopes – formed through the interaction of cosmic rays on the atmosphere, especially carbon-14 and beryllium-10 – are highly valuable tools enabling scientists to go back thousands of years. Since the sun's activity is the origin of variability of both these isotopes, their very good correspondence is proof of their reliability as tracers of the sun's activity. Unfortunately, all these records are too indirect to allow for the quantification of variations in the solar energy flow. For this reason, many attempts to explain climatic variations in recent centuries in terms of the sun's activity are based only on empirical correlations. The physical mechanisms which could explain the climatic impact of solar activity have not yet been identified. The significance of this impact for the prediction of future climate change is so great that a pluri-disciplinary approach, in which astrophysicists collaborate with climatologists, is essential. The aim of this symposium was thus to bring together scientists from different disciplines, to discuss the sun's functioning and that of the climate system, especially the various



Prof Édouard Bard

components affected most by the sun's activity.

Sylvaine Turck-Chièze, from the Stellar Plasmas and Nuclear Astrophysics Laboratory of the CEA, Saclay, described the modelling contribution to the knowledge of the functioning of our star. Models of varying complexities are used to test different hypotheses of functioning, and to foresee their evolution. Sylvaine Turck-Chièze reviewed current knowledge and noted that the observations of the SOHO satellite launched in 1995 had led to a new view of the sun. The mystery of the sun's internal dynamics was partially elucidated, although questions remain on the solar core and the interaction between the magnetic field of the radiative region and that of the convective region.

Gérard Thuillier, of the CNRS *Service d'Aéronomie* at Verrière-le-Buisson, followed with a talk on the main climate forcings and the possible mechanisms of the sun's impact on climate. No general agreement exists on reconstructions of total solar radiation for the past, but new projects are under way to provide additional data. Gérard

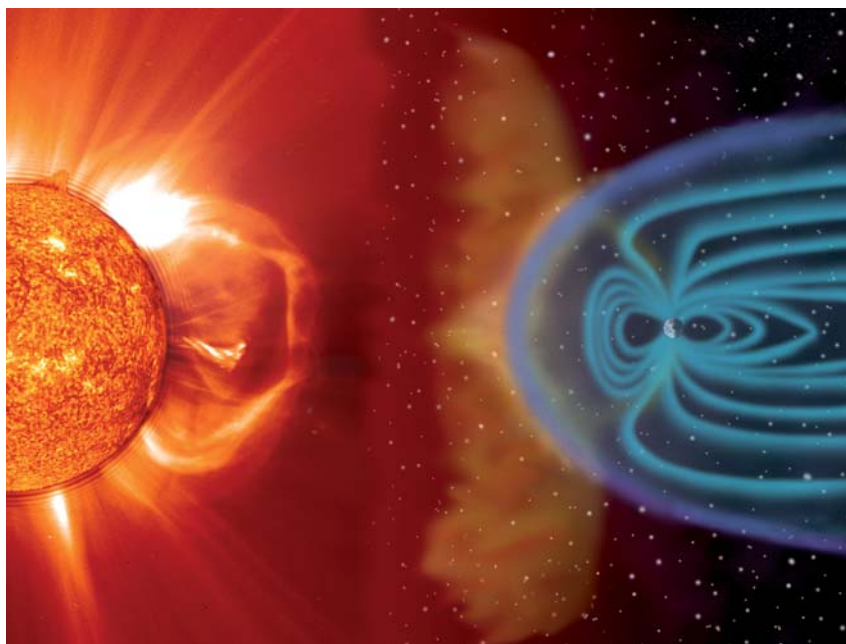


Photo-montage summing up earth-sun relations (NASA).

Thuillier presented the PICARD experiment, the aim of which is to measure total solar irradiance as well as the sun's diameter, as the two are related. The experimental mission is scheduled for next year in the ideal conditions of development of the next solar cycle, Cycle 24.

Thierry Dudok de Wit, from the *Laboratoire de Physique et Chimie de l'Environnement* of the CNRS and the University of Orleans, described the impacts of solar activity on the earth's environment, mainly in terms of bombardment of particles and electromagnetic wave emissions. He emphasized the ultraviolet component of these emissions, which presents a relative variability far larger than that of total irradiance, and whose impact on the stratosphere (via the formation of ozone) could be significant.

Olivier Boucher, from the British meteorological office, Hadley Centre, explained how current climate models take into account the internal interactions of the climatic system, based on biogeochemical cycles, especially the carbon cycle. These models are used to forecast

climate changes over the next century, especially in the framework of the IPCC. The models predict that these interactions will amplify global warming due to greenhouse gases, rather than limiting it.

Claudia Stubenrauch, of the *Laboratoire de Météorologie Dynamique* of the CNRS and *École Polytechnique* described the main radiative properties of clouds and the different means used to measure these properties on a global scale. Clouds play important but complex roles in the climate system. It has been suggested that their formation could be influenced by the solar activity, which is why it is essential to measure clouds as thoroughly as possible. Claudia Stubenrauch thus showed that the different types of measurement taken by satellites are complementary and should be used in association with one another to obtain complete information on different clouds and their properties.

Finally, Sandrine Bony-Léna, from the same *Laboratoire de Météorologie Dynamique*, showed how climate models further our understanding of the climate's response to external disturbances

(climate's sensitivity to a forcing). In particular, the models serve to break down this response into the different interactions peculiar to the climate system. One of the main results is to limit the contribution of clouds to about a quarter of the climate's global response. Thus, even if solar activity played a role via clouds, this component of the climate could not amplify the variations of solar activity any more significantly.

This day devoted to climate change and the role of the sun and other external forcings afforded the opportunity for scientists from different communities, with related research subjects, to come together. The symposium enabled them to review the current state of knowledge and the many questions that remain unanswered. ■

Mélanie Baroni and Gilles Delaygue



INSTITUTIONAL DATA

COLLÈGE DE FRANCE ORGANIZATION CHART

Administrator of the Collège de France: Pierre CORVOL

The Administrator of the Collège de France is a Collège de France professor, elected by his/her colleagues to direct the institution for a period of 3 years.

Professors of the Collège de France

I – MATHEMATICAL, PHYSICAL AND NATURAL SCIENCES

- Analysis and Geometry — Alain CONNES
- Differential Equations and Dynamical Systems — Jean-Christophe YOCCOZ
- Partial Differential Equations and Applications — Pierre-Louis LIONS
- Number Theory — Don ZAGIER
- Quantum Physics — Serge HAROCHE
- Mesoscopic Physics — Michel DEVORET
- Elementary Particles, Gravitation and Cosmology — Gabriele VENEZIANO
- Physics of Condensed Matter — (not appointed yet)
- Climate and Ocean Evolution — Edouard BARD
- Observational Astrophysics — Antoine LABEYRIE
- Chemistry of biological processes — Marc FONTECAVE
- Chemistry of Molecular Interactions — Jean-Marie LEHN
- Chemistry of Condensed Matter — Jacques LIVAGE
- Human Genetics — Jean-Louis MANDEL
- Genetics and Cellular Physiology — Christine PETIT
- Biology and Genetics of Development — Spyros ARTAVANIS-TSAKONAS
- Morphogenetic Processes — Alain PROCHIANZ
- Molecular Immunology — Philippe KOURILSKY
- Microbiology and infectious diseases — Philippe SANSONETTI
- Experimental Cognitive Psychology — Stanislas DEHAENE
- Physiology of Perception and Action — Alain BERTHOZ
- Experimental Medicine — Pierre CORVOL
- Historical Biology and Evolutionism — Armand de RICQLÈS
- Human Paleontology — Michel BRUNET

II PHILOSOPHICAL AND SOCIOLOGICAL SCIENCES

- Philosophy of Language and Knowledge — Jacques BOUVERESSE
- Philosophy of Life Science — Anne FAGOT-LARGEAULT
- Anthropology of Nature — Philippe DESCOLA
- Economic Theory and Social Organization — Roger GUESNERIE
- Modern and Contemporary History of Politics — Pierre ROSANVALLON
- Writings and cultures in modern Europe — Roger CHARTIER
- Contemporary Arab History — Henry LAURENS
- Rationality and Social Science — Jon ELSTER
- Comparative Legal Studies and Internationalization of Law — Mireille DELMAS-MARTY

III – HISTORICAL, PHILOLOGICAL AND ARCHAEOLOGICAL SCIENCE

- Pharaonic Civilization: Archaeology, Philology, History — Nicolas GRIMAL
- Assyriology — Jean-Marie DURAND
- Biblical communities — Thomas RÖMER
- History and Civilization of the Achaemenid World and of the Empire of Alexander — Pierre BRIANT
- Epigraphy and History of the Ancient Greek Cities — Denis KNOEPFLER
- Religion, Institutions and Society in Ancient Rome — John SCHEID

- Indo-Iranian Languages and Religions — Jean KELLENS
- History of India and Greater India — Gérard FUSSMAN
- Intellectual History of China — Anne CHENG
- History of Modern China — Pierre-Étienne WILL
- National Antiquities — Christian GOUDINEAU
- Turkish and Ottoman History — Gilles VEINSTEIN
- French Mediaeval Literature — Michel ZINK
- Modern and Contemporary French Literature: History, Criticism, Theory — Antoine COMPAGNON
- Modern Literatures of Neo-Latin Europe — Carlo OSSOLA
- History of European Medieval and Modern Art — Roland RECHT

Annual Chairs (2008-2009)

- Chair of Artistic Creation — Pierre-Laurent AIMARD
- European Chair - Sustainable Development - Environment, Energy and Society — Henri LERIDON
- International Chair - Knowledge against Poverty — Esther DUFLO
- Chair of Technological Innovation - Liliane Bettencourt — Mathias FINK

Emeritus Professors of the Collège de France

- Anatole ABRAGAM — Nuclear Magnetism
- Maurice AGULHON — Contemporary French History
- Étienne-Émile BAULIEU — Bases and Principles of Human Reproduction
- Georges BLIN — Modern French Literature
- Yves BONNEFOY — Comparative Studies of the Poetic Function
- Pierre BOULEZ — Invention, Technique and Language in Music
- Pierre CHAMBON — Molecular Genetics
- Jean-Pierre CHANGEUX — Cellular Communication
- Claude COHEN-TANNOUDI — Atomic and Molecular Physics
- Yves COPPENS — Palaeontology and Prehistory
- François-Xavier COQUIN — Modern and Contemporary Russian History
- Gilbert DAGRON — Byzantine History and Civilization
- Jean DAUSSET — Experimental Medicine
- Jean DELUMEAU — History of Religious Mentalities
- Michael EDWARDS — Literary Creation in English
- Marcel FROISSART — Corpuscular Physics
- Marc FUMAROLI — Rhetoric and Society in 16th and 17th century Europe
- Jacques GERNET — Social and Intellectual History of China
- Jacques GLOWINSKI — Neuropharmacology
- Gilles Gaston GRANGER — Comparative Epistemology
- François GROS — Cellular Biochemistry
- Jean GUILAINE — European Civilizations in the Neolithic and the Bronze Age
- Ian HACKING — Philosophy and History of Scientific Concepts
- Pierre HADOT — History of Hellenistic and Roman Thinking
- Claude HAGÈGE — Linguistic Theory
- Françoise HÉRITIER — Comparative Studies of African Societies
- François JACOB — Cellular Genetics
- Pierre JOLIOT — Cellular Bioenergetics
- Yves LAPORTE — Neurophysiology
- Jean LECLANT — Egyptology
- Nicole LE DOUARIN — Molecular and Cellular Embryology
- Xavier LE PICHON — Geodynamics
- Georges LE RIDER — Economic and Monetary History of the Hellenistic Orient
- Emmanuel LE ROY LADURIE — History of Modern Civilization
- Claude LÉVI-STRAUSS — Social Anthropology
- Edmond MALINVAUD — Economic Analysis
- André MIQUEL — Classical Arabic Language and Literature

- Philippe NOZIÈRES — Statistical Physics
- Jean-Claude PECKER — Theoretical Astrophysics
- Jacques PRENTKI — Theoretical Physics of Elementary Particles
- Daniel ROCHE — French History in the Age of the Enlightenment
- Jacqueline DE ROMILLY — Greece and the Development of Moral and Political Thinking
- Jean-Pierre SERRE — Algebra and Geometry
- Michel TARDIEU — History of Syncretisms in Late Antiquity
- Javier TEIXIDOR — Semitic Antiquities
- Jacques THUILLIER — History of Artistic Creation in France
- Jacques TITS — Group Theory
- Pierre TOUBERT — Occidental History
- Paul-Marie VEYNE — History of Rome
- Nathan WACHTEL — History and Anthropology of Meso- and South American Societies
- Harald WEINRICH — Romance Languages and Literatures
- Jean YOYOTTE — Egyptology

Administration

- Director of Cultural Affairs and External Relations: Florence TERRASSE-RIOU
- Director of Administrative and Financial Affairs: Jean-François RIGONI

LECTURES GIVEN BY THE PROFESSORS ABROAD

BELGIUM

- Free University of Brussels
 - Édouard BARD (holder of the Chair of Climate and Ocean Evolution)
Past and future climates.

BRAZIL

- University of São-Paulo (Levi-Strauss chair)
 - Mireille DELMAS-MARTY (holder of the Chair of Comparative Legal Studies and Internationalization of Law)
Penal law on the inhuman.

CHINA

- Institute of Otolaryngology, Chinese PLA General Hospital, Beijing
 - Christine PETIT (holder of the Chair of Genetics and Cellular Physiology)
Hearing and deafness.
- City University of Hong Kong
 - Jean-Marie LEHN (holder of the Chair of Chemistry of Molecular Interactions)
Supramolecular Chemistry – From Molecular Recognition towards Self-Organization.

GERMANY

- University of Bonn (Ernst Robert Curtius chair)
 - John SCHEID (holder of the Chair of Religion, Institutions and Society in Ancient Rome)
The meaning of rites in Roman religion.
 - Michel ZINK (holder of the Chair of French Mediaeval Literature)
Poetry as narrative. Medieval examples.
- University of Kiel
 - Édouard BARD (holder of the Chair of Climate and Ocean Evolution)
The tropical record of abrupt climate changes.

GREECE

- University of Athens
 - Spyros ARTAVANIS-TSAKONAS (holder of the Chair of Biology and Genetics of Development)
The development biology and evolutionary implications of Notch signaling crosstalk.

ITALY

- University Ca'Foscari, Venice
 - Pierre-Étienne WILL (holder of the Chair of History of Modern China)
 1. *Militarism and the revolutionary connection in late-Qing and early Republican Shaanxi province*
 2. *Engineers and state-building: Li Yizhi (1882-1938) and his circle.*

NETHERLANDS

- University of Utrecht
 - Édouard BARD (holder of the Chair of Climate and Ocean Evolution)
The last deglaciation.

RUSSIA

- M.V. Lomonossov Moscow State University
 - Jean-Marie LEHN (holder of the Chair of Chemistry of Molecular Interactions)
Supramolecular Chemistry - From Molecular Recognition towards Self-Organization.

SINGAPORE

- Agency for Science and Technology
 - Pierre CORVOL (holder of the Chair of Experimental Medicine)
Normal and abnormal angiogenesis.

SWEDEN

- University of Uppsala
 - Jacques LIVAGE (holder of the Chair of Chemistry of Molecular Interactions)
Soft chemistry synthesis of advanced materials.
 - Christine PETIT (holder of the Chair of Genetics and Cellular Physiology)
Hereditary deafness: from the genes to the cellular and molecular mechanisms of hearing.

SWITZERLAND

- University of Lugano
 - Carlo OSSOLA (holder of the Chair of Modern Literatures of Neo-Latin Europe)
"Renaissance" and "creation" in the 16th century.

TUNISIA

- University of Tunis
 - Jacques LIVAGE (holder of the Chair of Chemistry of Molecular Interactions)
Breakthroughs in solid state chemistry.

UNITED KINGDOM

- Maison française d'Oxford
 - M. Pierre BRIANT (holder of the Chair of History and Civilization of the Achaemenid World and of the Empire of Alexander)
Recent research on the Achaemenid Empire.
- Cambridge University
 - Édouard BARD (holder of the Chair of Climate and Ocean Evolution)
The ocean record of the last deglaciation.

UNITED STATES

○University of Chicago

- Édouard BARD (holder of the Chair of Climate and Ocean Evolution)
High latitude and tropical records of rapid climate changes.

- Stanislas DEHAENE (holder of the Chair of Experimental Cognitive Psychology)

Reading in the brain:

- 1 - *The visual word form area: myth or reality?*
- 2 - *Mirror errors: evidence for neuronal recycling in reading acquisition.*
- 3 - *Subliminal and supraliminal processing of words and digits.*

- Serge HAROCHE (holder of the Chair of Quantum Physics)

Exploring the quantum dynamics of atoms and photons in cavities.

- Michel ZINK (holder of the Chair of French Mediaeval Literature)

Courtly poetry, courtly short stories.

What poetry recounts.

○Massachusetts Institute of Technology - Harvard University - Portland University

- Alain BERTHOZ (holder of the Chair of Physiology of Perception and Action)

Main simplifiers in the cerebral mechanisms of perception and action.

○Yale University, New Haven

- Michel DEVORET (holder of the Chair of Mesoscopic Physics)

Single Electron Effects in Mesoscopic Systems.

The Collège de France, an Internationally Open Institution



Policy of Openness

The Collège de France's renown is a result of the interaction and collaboration that each of its Chairs maintains in its own discipline with specialists abroad. Based on these extensive and varied networks, the institution has gradually developed an assertive policy of internationalization, which has become one of its priorities.

Various measures favoured this orientation in the late 1980s and early 1990s: the creation of an European and an International Chair, the authorization to recruit foreigners to all permanent and annual Chairs, and the possibility for professors to delocalize up to a third of their lectures and seminars abroad. In parallel, the institution managed to increase the number of foreign scholars invited every year to teach under its Chairs.

With the number of exchanges increasing, the Collège started to enter into agreements with foreign institutions for the creation of Chairs to host its own professors. The aim was to establish sound relations. The first agreement was signed in 1997 for the creation of a Lévi-Strauss Chair at the Institute for Advanced Studies, Sao Paulo University. Since 2003-04 the policy has been intensified and to date fifteen agreements have been signed (see Box).

Some Figures

The following statistics give an idea of this international outreach:

Ten of the 52 permanent Chairs are currently occupied by foreign professors, and a total of 35 professors have occupied the two annual Chairs reserved for foreigners.

Since 1995 the professors of the Collège de France have undertaken some 350 teaching assignments abroad (ie the lectures and seminars that are part of their teaching, but excluding additional talks and lectures that they may be invited to deliver). One third of these assignments are provided for in agreements signed by the Collège.

Since 1995, 418 foreign lecturers from 37 countries have been guests at the Collège.

Finally, about a third of the fifty "young researchers" that the Collège hosts in its laboratories and libraries every year are from abroad.

In recent years the Collège de France has moreover organized European multidisciplinary conferences both in Paris ("European science and consciousness", 2004) and abroad ("A better world for all: realistic project or crazy dream", Brussels, 2006; "The New World of public health and prevention",

Berlin, 2007). The proceedings of these conferences are published.

The fact that half of the exchange programmes (assignments or invitations) have been situated within Europe bears witness to the Collège's participation in the movement to integrate European research and higher education. In addition, close to one third of its exchange programmes have been with the USA. Finally, strong ties also exist with Brazil, China, Singapore and the Middle East.

Prospects

The legibility and visibility of the Collège de France's international activities are a constant concern, and signing agreements is an appropriate means to that end. However, in view of the specific nature of the Collège and its relatively small size, its intention is not to multiply the number of new partnerships. Instead, the institution will endeavour to deepen existing relationships, with a strong focus on reciprocity and hosting foreign "young researchers" under its Chairs and in its laboratories. In fact this will be one of the priorities for the coming years.

The broadcasting of the Collège's teaching on the Internet substantially increases and diversifies its outside, and especially foreign, audiences. This programme will go from strength to strength as more and more lectures are made available

on line, eventually with translations so that they are accessible to non-francophone publics as well.

In the immediate future, a number of activities are planned for the 2008-09 academic year, including several lectures series by Collège de France professors: in Tunis (for the third consecutive year) in partnership with the Embassy of France; at the Maison Française in Oxford; and at the Institut Français of Madrid. As part of the Year of

France in Brazil in 2009, the Collège is involved in various scientific events, in partnership with the French and Brazilian science academies. Finally, the Collège has engaged in a partnership with the Agence Universitaire pour la Francophonie (AUF). It plans to broadcast the new Chairs' inaugural lectures ("Knowledge against poverty", 8 January 2008, and "Sustainable development", 5 March 2009) live on the "digital campuses" that the AUF has set up in

Francophone universities, and to make it possible to follow debates via video-conferencing. ■

Olivier Guillaume

Responsible for International Relations

LIST OF INTERNATIONAL AGREEMENTS

- Belgium (22 June 2007)
Free University of Brussels (and other universities of the French community in Belgium)
- Brazil (October 1997, renewed on 30 September 2002)
University of Sao Paulo / Institute of Advanced Studies (Lévi-Strauss Chair)
- Brazil (16 December 2004)
Forum of the Universities of Rio de Janeiro (Celso Furtado Chair)
- Canada (November 2003)
Universities of Quebec (CRÉPUQ)
- Czech Republic (17 March 2008)
Charles University of Prague
- China (10 March 2007)
City University of Hong Kong
- Germany (29 January 2008)
University of Bonn (Ernst Robert Curtius Chair)
- Israel (15 May 2007)
Hebrew University of Jerusalem / Institute of Advanced Studies
- Italy (28 May 2004)
National Research Council (CNR)
- Lebanon (6 April 2006)
Saint Joseph University of Beirut
- Singapore (15 December 2005)
A*STAR - Agency for Science, Technology and Research
- Spain (5 March 2004)
Botin Foundation Chair
- Sweden (8 June 2004)
University of Uppsala (and other Swedish universities)
- Switzerland (14 February 2008)
University of Lausanne – Federal Polytechnic School of Lausanne
- USA (26 April 2006)
University of Chicago

LECTURES AND LECTURE SERIES BY FOREIGN PROFESSORS INVITED BY THE ASSEMBLY OF THE PROFESSORS

State chairs reserved for foreign scholars

- Ahmad BEYDOUN, Professor at the University of Beirut (Lebanon)
 1. From the 1943 Pact to the Taef agreement: Resistance to deconfessionalism
 2. What “independence” actually meant
 3. A new inter-community deal?
 4. Does the Lebanese political system have a future?

- Maria Giovanna BIGA, Professor at “La Sapienza” University of Rome (Italy)

Syria in the 3rd millennium B.C. according to the Ebla archives.

 1. Life at the Ebla court
 2. Organization of the Eblaite state; royalty and the management of power
 3. The Ebla kingdom and its neighbours
 4. Ebla religion.

- Gyorgy BUDZÁKI, Professor at Rutgers University, Newark (United States)

Rhythms of the Brain: Neuronal synchrony

 1. Metabolic and wiring costs of excitatory and inhibitory systems
 2. Oscillatory and non-Oscillatory emergence of cell assemblies
 3. Internally advancing assemblies in the hippocampus
 4. Coupling of hippocampal and neocortical systems.

- José Emilio BURUCÚA, Professor at the University of San Martín (Argentina)
 1. The concept of otherness and pictorial representations of the history of Ulysses since the Renaissance.
 2. Ancient massacres and modern massacres: problems of historiography and of representation.
 3. The Pathosformeln of laughter and European engraving in early modernity.
 4. The engravings of Quichote in 17th century France.

- Jean COHEN, Professor at Columbia University, New York (United States)

Rethinking Sovereignty, Rights and International Law in the Epoch of Globalization:

 1. Sovereignty and International Law: A Dualist Perspective
 2. Cosmopolitanism and Empire
 3. Intervention, Occupation and Human Rights
 4. Towards the Constitutionalization of International Law.

- Elaine FUCHS, Professor at Rockefeller University, New York (United States)
 1. Stem Cells: Biology, Ethics and potential for Medicine
 2. The Biology and Genetics of Skin and Hair
 3. Cell adhesion, Migration and Cancer
 4. Stem Cells of the Skin and their Lineages.

- Diego GAMBETTA, Professor at Nuffield College, Oxford University (United Kingdom)

The theory of signals and its application to human behaviour.

- Peter GOLDEN, Professor at the University of Rutgers, New Jersey (United States)
 1. The origins and shaping of the Turks of medieval Eurasia; Ethnicity in Medieval Eurasia
 2. The origins of the Khazars and their conversion to Judaism in a Eurasian context, ie the adoption of universal faiths by the Turkic nomads
 3. Sacral kingship among the early Turkic peoples with particular reference to the Khazars
 4. The Qipchaqs: origins and migrations.

- Orly GOLDWASSER, Professor at Hebrew University of Jerusalem (Israel)
The archaeology of Egyptian thinking: classification and categories of the ancient Egyptians.
- Albert de JONG, Professor at the University of Leiden (Netherlands)
The four phases of Mazdean religion.
- Leonid KOGAN, Professor at the State University of Russia
 1. Introduction: general botanic terminology and names of plant parts
 2. Wild plants
 3. Domesticated plants: cereals and vegetables
 4. Domesticated plants: trees and vines.
- Nicholas PURCELL, Official Fellow and Tutor in Ancient History, St. John's College, Oxford (United Kingdom)
 1. Becoming maritime
 2. The slopes of connectivity
 3. On the fringes of the Mediterranean: ecology, networks, interdependencies
 4. The Tethys corridor and problems of the Transeuphratean.
- Jose Alexandre SCHEINKMAN, Professor at Princeton University (United States)
Long Term Risk.
- Victor STOICHITA, Professor at the University of Fribourg (Switzerland)
Of tears and Saints.

EVENTS AT THE COLLÈGE DE FRANCE – 2007-2008

October

- Concert
- Public talks by the Foundation for the Commemoration of the Shoah
- ARC “Young Researchers’ Day” (Association pour la Recherche sur le Cancer)
- Seminar on Asian epigraphy (Prof J.-M. Durand)
- Collège de France Autumn Symposium: “On Authority”

November

- Re-opening session of the IHEST (Institut des Hautes Etudes pour la Science et la Technologie)
- Symposium: “Tibet” (Research team received Alain Thote)
- Symposium: “The Islamization of Central Asia” (Prof G. Veinstein)
- Public talks by the Foundation for the Commemoration of the Shoah
- Establishment of the IUF (Institut Universitaire de France)
- Bergson’s L’évolution créatrice, 100 years later (1907-2007) Epistemology and Metaphysics International conference to conclude Bergson Year (Prof A. Fagot-Largeault)
- “Envie d’Amphi” (Mairie de Paris)
- Prize-giving for the International Ideas Competition (Mission de Préfiguration)
- Talk on Paul Bert, Association des Membres des Palmes Académiques

December

- International symposium: “Barhebraeus and the Syriac Renaissance” (Prof M. Tardieu)
- Awarding of the INSERM prize (Institut National de la Santé et de la Recherche Médicale)
- Open day of the Neuropsychology Society (Société de Neuropsychologie de Langue Française)
- Symposium: “Globalization: Figures and Problems” (Prof P. Rosanvallon)
- Awarding of the INRIA Science Academy prize (Institut National de la Recherche en Informatique et Automatique)

January

- Symposium: “Images and Design in Figurative Writing” (Prof N. Grimal)

April

- Symposium of the Union Rationaliste (Prof G. Fussman)
- Symposium: “Wittgenstein: On Images, Language and Mind” (Prof J. Bouveresse)

May

- Concert in the framework of the Collège de France lectures at Aubervilliers
- De Gennes Days, symposium in honour of Pierre-Gilles de Gennes (Pierre-Gilles de Gennes Foundation)
- Symposium: “Napoleon III, the Man, the Politician” (Napoleon Foundation)
- Symposium: “The Notion of Function from Life Science to Technology” (Prof A. de Ricqlès)
- Open day of the School of Neurosciences
- Symposium: “Mamluks, Turks and Ottomans” (Prof H. Laurens – G. Veinstein)

June

- 3D Symposium (Prof A. Berthoz)
- Seminar on terrorism “Typologies du terrorisme et communauté(s) de valeurs” (Prof M. Delmas-Marty and Prof H. Laurens)
- Symposium: “L’ivresse de la liberté. The 1908 Revolution in the Ottoman Empire” (Prof G. Veinstein)
- Symposium: “The monarchisms of the East”
- Symposium: “The Struggle against Exclusion by the Educational System: a Challenge” (Ecole Polytechnique Alumni Association)
- Open day of the Collège de France Biology Institute

RESEARCH TEAMS RECEIVED

The policy of hosting research teams was implemented on the basis of an Assembly vote dated 18 March 2001 to contribute towards the training of young research teams and to enhance the Collège's scientific potential. In some cases it was a temporary solution for teams directed by a professor about to retire.

Space permitting, these teams, which have to obtain the approval of their parent institution and to receive on-going funds from it, can be officially hosted by the Collège de France team for a four-year contract, renewable once.

They receive a € 10,000 annual grant and may obtain ATER and lecturing posts, on the same basis as the laboratories of the Chairs.

The final decision to host these teams is taken by the Assembly of Professors, after evaluation by a commission of professors.

Teams currently hosted:

- François TRONCHE
Molecular genetics, physiology and behaviour (UMR 7148)
- Christian ROBIN
Semitic studies (UMR 7119)

- Alain THOTE
Centre for Research on Chinese and Japanese Civilization (UMR 7129)
- Lyne BANSAT-BOUDON
Institute for Indian Studies
- Xavier JEUNEMAITRE
Genes and blood pressure mineralocorticoid (U 772)
- Catherine LLORENS-CORTES
Central neuropeptides and the regulation of body fluid homeostatis and cardiovascular functions (U 691)
- Jean-Michel DENIAU
The dynamics and physiopathology of neuron networks (U 667)
- Boris GUTKIN
Computational neuroscience
- Christian GIAUME
Junctional communication and interaction between neuronal and glial networks
- Claude RANGIN and Pierre HENRY
EGERIE (Team Geodynamics of Exchange Research-Industry-Learning)

UMR: Unité mixte de recherche
(Combined Research Unit)

U: Unité (Unit)

TEMPORARY POSITIONS AT THE COLLÈGE DE FRANCE – 2008-2009 (MAÎTRES DE CONFÉRENCES AND ATER)

Temporary positions permit to receive yearly 38 Maîtres de conférences (Assistant Professors) and 13 ATER (Research Assistants and Post-Doctoral positions) in the chairs and research laboratories at the Collège de France.

Nationality	Number
American	1
Argentinian	1
Brazilian	2
Chinese	1
French	33
French-American	1
Greek	1
Italian	3
Japanese	1
Lebanese	1
Romanian	1
Spanish	1
Swiss	1
Tunisian	1
Ukranian	1
Uruguayan	1

THE COLLÈGE DE FRANCE INSTITUTES

The Collège de France has four Institutes: Biology; the Contemporary World; Literary Studies; and the Far East. These are informal structures with no official status from an administrative point of view. They group together Chairs and hosted teams.

The Institutes are created or closed on the initiative of the professors concerned, after a formal decision by the Assembly.

They promote and facilitate research by defining common projects and by pooling technical staff, equipment (technical facilities, libraries, etc.) and premises.

The modalities of these Institutes' organization may vary.

Institute of Biology

The Collège de France Institute of Biology, created in 1983 on a decision of the Assembly of Professors, includes the Collège's Professors of Biology (whether their laboratory is located at the Collège itself or elsewhere) and the teams hosted by the Collège. The incumbent President is Alain Berthoz.

Chairs whose laboratories are located at the Institute of Biology:

- Alain Berthoz – Physiology of Perception and Action (CNRS UMR 7152)
- Pierre Corvol – Experimental Medicine (Inserm U833)

Chairs whose laboratories are not located at the Collège de France:

- Spyros Artavanis-Tsakonas – Developmental Biology and Genetics
- Stanislas Dehaene – Experimental Cognitive Psychology (Inserm-CEA 562)
- Philippe Kourilsky – Molecular Immunology
- Jean-Louis Mandel – Human Genetics (Inserm U596)
- Christine Petit – Genetics and Cell Physiology (Inserm U587)
- Alain Prochiantz – Morphogenic Processes (arrival on the Marcelin Berthelot site in 2008)

Hosted teams located within the Institute of Biology (they benefit from all the Institute's resources):

- Jean-Michel Deniau – Inserm U667 – Dynamics and Pathophysiology of Neuronal Networks

- Xavier Jeunemaitre – Inserm U772 – Genes and Blood Pressure
- Catherine Llorens-Cortes – Inserm U691 – Central neuropeptides and the regulation of body fluids
- François Tronche – CNRS UMR 7148 – Molecular Genetics, Neurophysiology and Behaviour
- Christian Giaume – Inserm U840 – Junctional communication and interaction between neuronal and glial networks.

Prof Anne Fagot-Largeault, holder of the chair of Philosophy of Biological and Medical Science, and Prof Armand de Ricqlès, holder of the chair of Historical Biology and Evolutionism, also participate in discussions concerning the Collège de France Institute of Biology.

The aim of the Institute is to promote the research being done within the Collège de France, via several actions defined by the professors of the Institute and applied by its Coordination Committee. This committee consists of staff from each of the units and research laboratories located on the Marcelin Berthelot site. It is chaired by the President of the Institute of Biology.

Shared resources:

- animal facilities: conventional and transgenic
- technical platforms: confocal imaging and electron microscopy, neural imaging
- equipment for studying behaviour in rodents
- document library

Scientific activities:

- Seminars by each professor or laboratory, and PhD examinations
- Seminars organized jointly by different professors and hosted teams
- Organization of the Institute of Biology's Science Day.

One of the Institute of Biology's most important missions is to enable young teams to occupy research space on a four-yearly basis, renewable once.

Shared funding:

Funding is provided by the Collège de France Voronoff Foundation and a grant from the Collège's Federative Institute of Biological Research (IFR 52, Inserm-CNRS).

Institute of the Contemporary World

The Institute of the Contemporary World was created in 2005.

It groups together six Collège de France Chairs, five of which are located on the Ulm site and one on the Cardinal Lemoine site:

- Mireille Delmas-Marty – Comparative Legal Studies and Internationalization of Law
- Philippe Descola – Anthropology of Nature
- Jon Elster – Rationality and Social Sciences
- Roger Guesnerie – Economic Theory and Social Organization
- Henry Laurens – Contemporary Arab History
- Pierre Rosanvallon – Modern and Contemporary History of Politics

The Institute is coordinated by a professor on the basis of a two-year rotating system. Pierre Rosanvallon is coordinator for 2006 and 2007.

The members of the Institute are currently all participating in a multi-disciplinary study on globalization, focused on the following three dimensions: democracy, the rule of law, and the market.

Three key topics are addressed:

- Management of global collective (public) goods
- National sovereignty in question and the question of governance
- Towards a global political society: law and politics in the constitution of an international order.

Several colloquiums will address these issues in 2007 and 2008. Study days will also be devoted to the problems of terrorism and civil wars.

Institute of Literary Studies

The Institute of Literary Studies combines the Collège de France Chairs devoted to literature studies and related subjects (history of art, history of books):

Professors:

- Roger Chartier: Writing and cultures in modern Europe
- Antoine Compagnon: Modern and contemporary literature: history, theory, critique
- Michael Edwards: Studies of literary creation in English
- Carlo Ossola: Modern literatures of neo-latin Europe

- Roland Recht: History of European medieval and modern art
- Michel Zink: Literatures of medieval France

Emeritus Professors:

- Yves Bonnefoy: History of the poetic function
- Marc Fumaroli: Rhetoric and society in Europe (16th–17th centuries)
- Harald Weinrich: Romance languages and literatures.

Michel Zink is currently the Director of the Institute of Literary Studies. Odile Bombarde, lecturer, is responsible for the secretariat and coordination.

For the past fifteen years, the Institute of Literary Studies has regularly organized colloquiums under the responsibility of one of its members. These colloquiums bring all of its members together around a common research programme. Examples include Yves Bonnefoy's annual colloquium on 'Poetry's self-awareness', held at the University of Sarrebruck in 2005; Michel Zink's colloquium on *L'œuvre et son ombre. Que peut la littérature secondaire?* (Editions de Fallois, 2002); and Carlo Ossola's colloquium on *Pétrarque et l'Europe* (Editions Million, 2006).

The Institute of Literary Studies recently launched a new programme on translation. A preparatory day will be held in the autumn of 2007 and the first colloquium is scheduled for 2008.

Finally, the Institute of Literary Studies is closely associated with the publication of the *History of the Collège de France*, coordinated by Marc Fumaroli. The first volume was published in 2006.

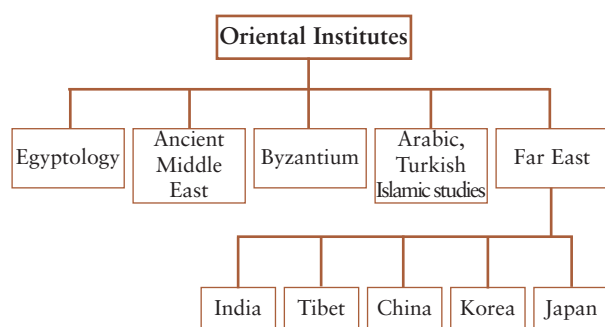
The Collège de France's Oriental Institutes

As a pioneer in oriental studies in France and in some cases in the world, the Collège de France has always had very rich libraries in this field. Its collections were enhanced by the transfer in 1973 of the oriental studies institutes from the former Sorbonne. To a large extent, these libraries had always been open to researchers from outside the Collège de France. But their statuses differed considerably, they functioned independently, and they did not belong to the French university library system, which cut them off from an essential source of funding (for staff and operating costs). The development of catalogues accessible via Internet also necessitated the choice and purchase of new management systems, the costs of which exceeded

the means of individual libraries. Finally, most of the libraries were affiliated with a Chair and consequently depended on its existence. In such cases the Collège could be tempted to maintain a particular Chair to ensure the survival of its library, which was often the only one of its kind in France.

The reform adopted on 26 June 2005 by the Assembly of Professors consisted primarily in systematizing a series of measures, most of which had been taken previously by the Collège to remedy this situation.

1. The Oriental Institutes now form a federation of five Institutes with a large degree of managerial independence and no legal ties with the Chairs:
2. The Oriental Institute's documentary collections are considered to be specialized sections of the general library. This will eventually lead to the unification of the catalogues and to a coordinated procurement policy. The collections are currently part of the university documentation system (SUDOC).



3. It is primarily the institutes, that is, institutions devoted to research and managed jointly with researchers, most of whom are from outside the Collège, that use the libraries. These institutes have the means to publish. Each of them is run by a Director and a Scientific Committee appointed for three years. The Federation of Institutes is headed by the Council consisting of Collège de France professors and a Scientific Committee with diverse outside personalities.

4. Although the collections are considered to be 'classical', and the researchers are often specialists in Antiquity or the Middle Ages, the contemporary world falls within their research field. This is not only because classical India ended with the arrival of the British, and the chronological limit of China was the end of the Manchurian Dynasty (1912). The linguistic collections have no chronological limit and the Bible, the Koran, the Veda, and

Buddhist and Confucian texts are all too often at the crux of contemporary issues or violence for their current importance to be denied.

5. This reform has been endorsed by agreements with the Collège de France's main partners (the Under-directorate of libraries of the Ministry for Higher Education and Research, the General Directorate of the CNRS, the BULAC (university library of languages and civilizations), the national institute for living oriental languages and civilizations, and the institute for research on the history of texts). The sharing of competencies and funding has thus been defined. ■

COLLÈGE DE FRANCE WEBSITES – PODCASTS

Since its creation in 2000 the Collège de France website has grown considerably. The Institution's lectures are thus disseminated more widely, both nationally and internationally, and Internet users are offered a technically efficient and aesthetic tool. This process has been enhanced by the use of new technologies.

In November 2006 the French website was redone completely: clearer navigation; a more informative home page on the Institution's current news; more modern site, with quality iconography; an architecture that affords rich possibilities for the presentation of content; the integration of new media: podcasts, audio and video; an RSS feed (system of subscription to a selected site); a relevant search engine and optimized referencing of all contents for specialized search engines and directories (insertion: keywords, scientific abstracts, titling of downloaded documents, etc.).

In this new version, some sections have been highlighted, e.g. publications (these pages are very frequently consulted) and research. In the latter section one of the Institution's main purposes is highlighted, as well as its main mission: the professors' own original research. Each professor has his or her own space of at least six web pages.

The website does not only describe the Collège de France's history and functioning. It is designed essentially to make this Institution known, in order to promote the diversity and quality of its teaching and research work. Implicit therein is the objective of disseminating this scientific material as widely as possible, in a spirit of openness, free-of-charge access, and scientific sharing. Over one thousand scientific documents (lecture notes, abstracts, bibliographies, etc.) are currently available for downloading.

The website is also a tool made available to all the professors and emeritus professors for disseminating scientific documents (PDF or audio) to an audience close to their research field (students, researchers, lecturers, etc.) and for presenting their bibliography and/or biography to other colleagues or organizations.

Since September 2007, over a period of one year, there have been 854,993 connections to the Collège de France website.

In the same period, in order to increase the dissemination of lectures and to enable more people to have access to their audio transmissions, a system of audio podcasting was set up for 20 professors' lectures.

In one year, they have been downloaded 1,400,000 times and classified first by the 'iTunes' podcast reader. Internet users can also download them directly from the website; there have been 458,619 downloadings during the same period. During the coming year we hope to double this dissemination. As regards the scientific Chairs, the documents projected during lectures are also available, as it is often essential to a sound understanding. This technology has a considerable educational value and caters mainly for students.

Some videos are also available and we are planning on offering Internet users short interviews with Collège de France professors.

In May 2007 an English-language website was created, with the following sections:

- Professors: a presentation of their research domain, a biography and bibliography, a list of professors and Chairs, honorary professors and deceased professors
- Research: presentation of the research laboratories, the Institutes and the teams hosted
- Institution: history of the Collège de France, functioning of the Institution, archaeology, projects and libraries
- Lecture agenda, news
- International: presentation of conventions with foreign partners
- Publications: presentation of all the Institution's publications
- Search engine.

This site is designed to meet an international public's expectations. The ergonomics are however identical to the French one, to preserve the unity and identity of both sites. The English site will be developed further during the next few months. ■



PUBLICATIONS – 2007-2008

The Collège de France has a partnership with the Éditions Fayard and the Éditions Odile Jacob for publishing the inaugural lectures of the professors, some lectures of invited professors and the proceedings of some of the Collège's colloquiums.

Éditions Fayard

Collection "Leçons inaugurales"

- Pierre MAGISTRETTI, *La neuroénergétique : De la synapse à l'image*, forthcoming (November 2008)
- Michel DEVORET, *De l'atome aux machines quantiques*, forthcoming (November 2008)
- Michel BRUNET, *Origine et histoire des hominidés*, forthcoming (November 2008)
- Gérard BERRY, *Pourquoi et comment le monde devient numérique* (2008), n° 196
- Roger CHARTIER, *Ecouter les morts avec les yeux* (2007), n° 195
- Alain PROCHIANTZ, *Géométries du vivant* (2007), n° 194

Hors Collection :

- Jean GUILAINE, *Les Racines de la Méditerranée et de l'Europe*, Leçon de clôture (2008)

Éditions Odile Jacob

- CHANGEUX J.P. (éd.), *L'Homme artificiel* (2007)
- REISSE J. et CHANGEUX J.-P. (éds.), *Un monde meilleur pour tous*, 2008
- COMPAGNON A. (éd.), *De l'autorité*, 2008
- BOUVERESSE J. et WAGNER P., *Mathématiques et expérience*, forthcoming (January 2009)
- EVERS K., *Neuroéthique*, forthcoming (2009)

Yearbook

- *Cours et travaux du Collège de France. Résumés 2006-07. Annuaire 107^e année.*

DVDs

Coproduction Collège de France / CNED / Doriane Films

- Michel BRUNET, *Origine et histoire des hominidés*, 2008.
- Manfred KROPP, *Un philologue lit le Coran*, 2008.
- Roger CHARTIER, *Ecouter les morts avec les yeux*, 2007.

The inaugural lectures of Profs. A. Prochiantz, G. Berry, P. Magistretti can be downloaded on the website of the Collège de France (www.college-de-france.fr).

COLLÈGE DE FRANCE AUTUMN SYMPOSIUM – 2008-2009

At the origins of human dialogue: Speech and music

16-17 October 2008

From where does our species get its singular ability to give meaning to the expression of acoustic signals? Speech and music shape social cognition through the sharing of emotional states, intentions, symbols and cultures. Why and how did these communication systems appear during Human evolution? Darwin argued that there were musical changes in the voice under the effect of emotion, and saw the production of meaning as an intermediate step in the acquisition of speech. Does that mean that there are links between the sounds emitted and processed by the two systems? Can we talk of musical language? Or should we agree with Wagner that music starts where the power of words ends?

Although none of these questions are new, partial answers are emerging from advances over the past two decades in the cognitive neuroscience of music and language. New concepts, tools and research subjects are arising from the encounter between neurobiologists, evolution specialists, philosophers, psychologists, anthropologists, psycho-acousticians, informaticians, linguists, musicologists, interpreters and composers. This symposium will illustrate just how stimulating and fertile this reflection is. ■

Programme

Thursday 16 October

Du signal acoustique à la perception

● Entendre : les bases physiologiques de l'audition
Christine Petit, *Collège de France*

● Helmholtz et la théorie physiologique de la musique
Jacques Bouveresse, *Collège de France*

Parole et musique : le propre de l'homme ?

● Mice, chimpanzees and the molecular basis of language
Wolfgang Enard, *Max-Planck-Institute of evolutionary Anthropology, Germany*

● L'auto-organisation dans l'évolution de la parole
Pierre-Yves Oudeyer, *INRIA, France*

Diversité des cultures, invariance des structures ?

● Comment formaliser la diversité des langues ?
Luigi Rizzi, *University of Siena, Italy*

● Entre parole et musique : les langages tambourinés d'Afrique Centrale

Simha Arom, *CNRS, langues- musiques-sociétés, France*

L'invention de nouveaux modes de communication

● Capturer la parole vive : la notation de la musique de la parole

Roger Chartier, *Collège de France*

● Poésie et musique

Michael Edwards, *Collège de France*

● Synthèse de la voix parlée et chantée

Xavier Rodet, *IRCAM, France*

● Concert par Donatienne Michel-Dansac, *soprano*

Réalisation informatique musicale IRCAM

Héctor Parra : *Strette* / Georges Aperghis : *Récitations* (extraits)

Friday 17 October

Plasticité et éducation

● L'apprentissage du chant chez l'oiseau : l'importance des influences sociales

Martine Hausberger, *Université de Rennes, France*

● Comment les enfants apprennent-ils leur langue maternelle ?
Ghislaine Dehaene-Lambertz, *CNRS, Centre NeuroSpin*

● Variability in brain plasticity : how can musical training improve cognition ?

Helen Neville, *University of Oregon, U.S.A.*

Le dialogue en échec

● Amusies et mécanismes cérébraux de la perception musicale

Isabelle Peretz, *Université de Montréal, Canada*

● Les raisons de l'autisme

Monica Zilbovicius, *INSERM, CEA, France*

De la parole au chant

● De la parole et du bruit : l'organisation de la compréhension orale

Christian Lorenzi, *ENS, CNRS, Université Paris Descartes*

● Parole-chant : L'opéra

Claude Hagège, *Collège de France*

Musique du langage, langage de la musique

● Musique et parole, de l'acoustique au numérique
Jean-Claude Risset, *CNRS – LMA, France*

● « Parole, Parole, Parole »

Peter Szendy, *Université Paris X Nanterre, France*

● L'émotion dans le langage musical

Emmanuel Bigand, *CNRS, Université de Bourgogne*

The programme and lectures will be available on www.college-de-france.fr



History, through time



As the Renaissance spread throughout Europe, great minds started to explore subjects that had previously aroused no curiosity, and the invention of printing meant that the wealth of philosophy contained in the chefs-d'œuvre of Antiquity was becoming more widely available. Teachers capable of interpreting and commenting on these matters were in demand. Thus, the Collège Royal was set up, which later became known as the Collège de France.

1530



King François I, on the advice of Guillaume Budé, his «master of the library», appointed six «royal readers»: three for Hebrew (François Vatable, Agathias Guidacerius, Paul Paradis), two for Greek (Pierre Danès, Jacques Toussaint) and one for mathematics (Oronce Finé). Their lectures were free and open to anyone.

1551

After requisitioning the Collèges de Tréguier and de Cambrai where he installed «royal readers» in 1551, Henri II extended the range of subjects taught by the Collège to philosophy. He created a chair for Ramus (Pierre de la Ramée), a notorious and controversial anti-Aristotelian philosopher, who then went on to teach mathematics from 1559 onwards.

1567

The Collège was mentioned for the first time in a document. It was a diploma awarded to Nicolas Goulu, certifying that he was qualified to teach Greek.

1610



On August 28, Louis XIII laid the first stone of a new building bearing the following inscription: «In the first year of the Reign of Louis XIII King of France and of Navarre, aged nine, and of the Regency of Queen Marie de Médicis his mother MDCX » (En l'an premier du Regne de Louis XIII Roy de France et de Navarre, agé de neuf ans, et de la Regence de la Roynne Marie de Médicis sa mère MDCX).

1699



On January 18, 1699, the Collège Royal was granted its coat of arms: against a sky blue background there is a silver book lying open in which are written the words Docet omnia. The book is surrounded by three golden fleurs-de-lis, two at the top and one at the bottom.

1707

There were now twenty chairs: eleven for the arts, nine for scientific subjects.

1772



Louis XV entrusted the architect Jean-François Chalgrin with the construction of the Collège Royal. Chalgrin was a winner of the Grand prix de Rome and a member of the Académie d'architecture. On May 16, the Collège was incorporated into the University of Paris. It regained its independence in 1794. On March 22, 1774, the Duc de La Vrillière laid the first stone of the new buildings, which were completed in 1778.

1824



A picture portraying the establishment of the «royal readers » by François I (on display in the Assembly room). It was painted by G. Guillon Lethière.

1870

The Collège Royal then the Collège Impérial became the Collège de France. There were now forty professors.

1963

The creation of two new chairs brought to fifty-two the number of professors.

1976

The professors were allowed to give some of their teaching outside Paris.

1988

The professors were allowed to give some of their teaching abroad.

1989

Creation of the European chair.

1992

Creation of International chair.

1998



Inauguration of new Collège de France premises. The renovation was carried out by the architects Bernard Huet and Jean-Michel Wilmotte.

2005

Creation of the chair of Artistic Creation.

2006

Creation of the chair of Technological Innovation - Liliane Bettencourt.

Academic Year 2008-2009

New Chairs Created

- Physics of Condensed Matter

New Professors

- Pierre-Laurent AIMARD, Chair of Artistic Creation 2008-2009
- Anne CHENG, Chair of Intellectual History of China
- Esther DUFLO, International Chair - Knowledge against Poverty, 2008-2009
- Mathias FINK, Chair of Technological Innovation - Liliane Bettencourt 2008-2009
- Marc FONTECAVE, Chair of Chemistry of biological processes
- Henri LERIDON, European Chair - Sustainable Development - Environment, Energy and Society, 2008-2009
- Thomas RÖMER, Chair of Biblic Communities
- Philippe SANSONETTI, Chair of Microbiology and Infectious Diseases

The Inaugural Lectures will take place at 6 pm in the Marguerite de Navarre Lecture Hall.

- 20 November 2008: Philippe SANSONETTI
- 11 December 2008: Anne CHENG
- 8 January 2009: Esther DUFLO
- 22 January 2009: Pierre-Louis AIMARD
- 5 February 2009: Thomas RÖMER
- 12 February 2009: Mathias FINK
- 5 March 2009: Henri LERIDON
- 26 March 2009: Marc FONTECAVE

Guest Conference Speakers

- Maurizio BETTINI, Professor, University of Rome (Italy)
- Fernando BOUZA, Professor, University Complutense of Madrid (Spain)
- Jonathan COLE, Professor, Columbia University, New York (USA)
- Andrea GIARDINA, Professor, Italian institute of Human sciences of Florence (Italy)
- Marilyn LAVIN, Emeritus Professor, University of Princeton (USA)
- Irving LAVIN, Emeritus Professor, Institute of Advanced Study, Princeton (USA)
- Michael E. MEEKER, Emeritus Professor, University of California, San Diego (USA)
- Henry OHLSSON, Professor, University of Uppsala (Sweden)
- Philippe Van PARIJS, Professor, University of Louvain (Belgium)
- Aldo SCHIAVONE, Professor, Istituto Italiano di Scienze Umane, Florence, Naples (Italy)
- Renate SCHLESIER, Professor, Institut für Religionswissenschaft, Freie Universität, Berlin (Germany)
- Biagio VIRGILIO, Professor, University of Pisa (Italy)
- Gerhard WOLF, Director, Kunsthistorisches Institut in Florenz (Italy)

WWW.COLLEGE-DE-FRANCE.FR

The Letter of the Collège de France

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