/ DEPARTEMENT D’ÉTUDES COGNITIVES

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1. A word from the director

Cognitive science involves the study of mental functions like perception, memory, reasoning, language, emotions, movement, and decision making. Its main goal is the joint investigation of the formal and algorithmic properties of these mental functions, their underlying psychological mechanisms, and their biological foundations.

More generally, the goal of cognitive science is to understand the functioning of the human mind, including the influence of cultural variation on humans’ cognitive abilities, the development of these abilities in infancy and childhood, how they are affected in certain neurological, psychiatric, and developmental pathologies, as well as their equivalents and precursors in animals.

Cognitive science therefore draws on a wide range of disciplines, which each contribute to our scientific understanding of the human mind: experimental psychology, neuroscience, information technology, mathematical modeling, but also linguistics, philosophy, social science, and economics.

Sharon Peperkamp,
Director of the Department of Cognitive Studies
2. Introduction

The Département d'Etudes Cognitives (DEC) of Ecole Normale Supérieure (ENS) is an interdisciplinary department of cognitive science at the crossroads of the humanities and social sciences, life sciences, and engineering. Training and research at DEC focus on higher mental functions such as perception, attention, decision making, reasoning, language, emotions, action, and social skills.

The department in a few numbers:

> 60 faculty and adjunct faculty
> 50 postdocs
> 100 doctoral students
> 50 master students

DEC hosts the Institut d'Etude de la Cognition (IEC), an excellence laboratory (Labex) created in 2011 and financed by the French ministry of higher education and research, which provides for department-wide additional research and training resources.
3. Training

Academic programs

DEC offers a unique training opportunity in Cognitive Science to students with diverse backgrounds. Interdisciplinary by its very nature, DEC welcomes students from the humanities as well as those from the sciences. They are selected at the undergraduate, Master and PhD levels through a highly competitive examination.

DEC is a partner in two master programs:

The “Cogmaster” (master in cognitive science, [http://www.cogmaster.net](http://www.cogmaster.net)) of ENS, EHESS and University Paris Descartes, which has majors in Linguistics & logic, Philosophy & social science, Mathematics & modeling, Experimental psychology, and Cognitive neuroscience.

The “Philmaster” (master in contemporary philosophy, [http://j.dokic.free.fr/philmaster/](http://j.dokic.free.fr/philmaster/)) of ENS and EHESS.
DEC also hosts students for a research internship in the *Dual Master in Brain and Mind Sciences* of ENS and UCL, the neuroscience track of the *Master of Integrative Biology* of University Pierre and Marie Curie (UPMC), and the *Ecole des Neurosciences Paris (ENP)*.

Finally, DEC coordinates the pre-doctoral Cognitive Engineering track of the *Institute of Technology and Innovation* of PSL Research University.

DEC includes a dense network of laboratories and research teams, which provides an ideal environment for a complete education in cognitive science, and from the very start puts students in direct contact with cutting edge research. A focus is placed on the large number of possibilities to participate in research internships in the Department’s laboratories.

Student support is offered by the following means:
- Scholarships for students in the Cogmaster
- Doctoral fellowships
- Teaching assistantships for doctoral students
- Privileged access to the learning center of ENS (*Bibliothèque des Sciences Expérimentales*)

**Career prospects**

After completing their master’s degree, most DEC students pursue a fully funded PhD, either in France or abroad, typically with the goal of working towards a career in research. Other important prospects outside of scientific research are found in domains such as engineering, consulting, and public policy.

**4. Research**

**Overview**

Research at DEC covers the full breadth of human cognitive abilities in four strategic research programs:

1. Language and communication
2. Social and collective cognition
3. Perception, attention and consciousness
4. Decision making and rationality

These cognitive abilities are investigated using the concepts, methods and techniques from a wide variety of disciplines: analytical philosophy, theoretical and experimental linguistics, anthropology, cognitive psychology, neuropsychology, neuro-economics, cognitive neuroscience, integrative neuroscience, and computational neuroscience. DEC is thus one of the rare departments in the world where research bridges the gap between the so-called hard sciences on the one hand and the social sciences and humanities on the other hand.

Research at DEC integrates the richest possible palette of theoretical tools (conceptual analysis, logic, mathematics, computational modeling) and experimental techniques (experimental psychology, developmental psychology, psychophysics, brain imaging, neuropsychology).

**Research units**

DEC hosts six research units that are each affiliated to *Ecole Normale Supérieure* and to one or more other institutions in research or higher education:

**Institut Jean Nicod (IJN):** Philosophy of language, Philosophy of mind, Philosophy of cognitive science, Linguistics, Social science
[http://www.institutnicod.org](http://www.institutnicod.org)
institutional affiliations: ENS, EHESS, CNRS

**Laboratoire de Neurosciences Cognitives (LNC):** Cognitive neuroscience
[http://iec-lns.ens.fr](http://iec-lns.ens.fr)
institutional affiliations: ENS, INSERM

**Laboratoire de Sciences Cognitives et Psycholinguistique (LSCP):** Cognitive psychology, Developmental psychology, Psycholinguistics
[http://www.lscp.net](http://www.lscp.net)
institutional affiliations: ENS, EHESS, CNRS

**Laboratoire des Systèmes Perceptifs (LSP):** Perception, Vision, Audition
institutional affiliations: ENS, CNRS
Logic, Life and Cognition (LLC-IHPST): Logic, Decision theory, Philosophy of cognitive science
http://www.ihpst.cnrs.fr/
institutional affiliations: ENS, University Paris 1, CNRS

NeuroPsychologie Interventionnelle (NPI): Cognitive neuropsychology
http://iec-npi.ens.fr
institutional affiliations: University Paris-Est Créteil ENS, INSERM

The Cogmatrix

A graphic illustration of the overall scientific project of DEC is shown below in the so-called “Cogmatrix”. It crosses the four strategic research programs with seven methodologies, and the activities of each of the six units are indicated by a unique color. (Note: the size of the rectangles is not proportional to the number of researchers involved.)

The “Cogmatrix”:
Strategic research programs and methodologies used to study them in the different research units at DEC.
Experimental platforms

DEC has several experimental platforms at Ecole Normale Supérieure, Hôpital Mondor and Hôpital Cochin Port-Royal for testing infants (http://sapience.dec.ens.fr/babylab/), children, and both healthy and brain-lesioned adults. These platforms are equipped with eye-trackers, as well as with EEG and NIRS recording systems.

Members of DEC also have access to fMRI and MEG facilities at the Institut du Cerveau et de la Moelle in Paris.
International collaborations

The Labex IEC supports nine thematic New Ideas programs to foster international collaborations. In particular, these programs fund multilateral conventions, as well as conferences, workshops, and thematic schools held at DEC.

The **New Ideas programs** are:

- New Ideas in Mathematical Philosophy
- New Ideas in the Philosophy of Mind and Language
- New Ideas in Linguistics
- New Ideas in Social Cognition
- New Ideas in Cognitive Development
- New Ideas in Neuropsychology
- New Ideas in Hearing
- New Ideas in Cognitive Neuroscience
- New Ideas in Computational Neuroscience

5. Living environment

ENS
DEC is a department in a unique setting: the Rue d'Ulm Campus of *Ecole Normale Supérieure* (ENS) in the heart of the Quartier Latin. Down the gently sloping hill of the Montagne Saint-Genevieve with the domed roof of the Pantheon providing an impressive backdrop, the main ENS campus is the center of a vibrant academic community composed of an exceptional student community and a distinguished Faculty of international scholars and researchers. The ENS offers students more than just a place to study, it provides them with a true university campus. At ENS, living and learning are intimately connected.

**Paris**

It’s impossible to talk about DEC and ENS without mentioning the remarkable and cosmopolitan city where they are located. Paris’s impressive scientific intellectual and cultural heritage makes the city itself a living classroom. Literally every street - from the cobble-stoned and wending paths of Montmartre to the tree-lined grands boulevards and from the lively market stalls in Belleville to the Grande Arche de la Défense - speaks eloquently of the city’s unique heritage and it’s singular present. Paris is also an especially vibrant city for the arts and sciences. Innumerable museums, experimental and avant-garde theaters, classical and contemporary music venues, cinemas, cafes, bistros and restaurants offer limitless possibilities for students to explore new horizons and embark on the stimulating and creative adventure of living in one of the world’s greatest cities.

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**6. Student community**

The community of students at DEC represents a remarkably diverse population.
Students with backgrounds in various disciplines come from France and a wide variety of other countries to pursue their training in cognitive science.

A student association, DEC-Life, promotes the social, cultural, and scientific atmosphere of the department. It coordinates several on-site activities, including language conversation groups, a movies club, a soccer team, and board game evenings. Every two years, it co-organizes a two-day retreat for all the members of DEC.

A diverse range of cultural, artistic, and sporting activities is also proposed by ENS, and campus-wide social events are regularly organized by the Social Activities Organizing Committee. More information on the ENS website: http://www.ens.fr/campus/cadres-de-vie/

7. Organization and government
8. Contact and map

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