

# Colloques Médecine et Recherche

## Neurobiology of "Umwelt": How living beings perceive the world

Paris - February 18, 2008

### Registration Form

**Family name / Nom** .....

**First name / Prénom** .....

**Speciality / Spécialité** .....

**Department or Unit / Service ou Laboratoire** .....

**Affiliation / Affiliation (Hôpital, Inserm, CNRS, etc)** .....

**Street / N° Rue** .....

**Area code / Code postal** .....

**City / Ville** .....

**Country / Pays** .....

**Telephone / Téléphone** .....

**Fax / Télécopie** .....

**E-mail** .....

#### • Registration Fee: Inscription au Colloque

70 € (before January 1, 2008)  
100 € (after January 1, 2008)

Including lunch, coffee-breaks, congress kit, proceedings  
Comprenant déjeuner, pauses-café, dossier du participant,  
livre des communications

**Free for students** but registration is compulsory and should be completed **before February 1, 2008**

#### • Payment Mode de règlement

Cheque should be made out to the Fondation IPSEN.  
Chèque à l'ordre de la Fondation IPSEN

**To be returned to the Fondation IPSEN with the registration fee  
For foreigners, payment on site will be accepted (cash only)**

*A retourner avec les droits d'inscription à la Fondation IPSEN*

**Students / Etudiants**

**Date** : .....

**Signature**



24, rue Erlanger - 75016 Paris  
Tél. : 33 (0)1 44 96 10 10 - Fax : 33 (0)1 44 96 11 99  
www.ipсен.com

### Neurosciences

- Glutamate, Cell Death and Memory  
Paris, September 24, 1990
- Gene Transfer and Therapy in the Nervous System  
Paris, September 23, 1991
- Motor and Cognitive Functions of the Prefrontal Cortex  
Paris, November 23, 1992
- Temporal Coding  
Paris, October 11, 1993
- Neurobiology of Decision-Making  
Paris, October 24, 1994
- Isolation, Characterization and Utilization of CNS Stem Cells  
Paris, September 18, 1995
- Normal and Abnormal Development of the Cortex  
Paris, October 16, 1996
- Neuroplasticity: Building a Bridge from the Laboratory to the Clinic  
Paris, October 6, 1997
- Neuroimmune Interactions and Neuropsychiatric Diseases  
Paris, October 5, 1998
- Neuronal Death: by Accident or by Design  
Paris, October 9, 2000
- Neurosciences at the Post-Genomic Era  
Paris, December 3, 2001
- Stem Cells in the Nervous System: Function and Clinical Implications  
Paris, January 20, 2003
- Neurobiology of Human Values  
Paris, January 24, 2005
- Memories : Molecules and Circuits  
Paris, April 24, 2006
- Retrotransposition, Diversity & the Brain  
Paris, March 12, 2007
- Neurobiology of "Umwelt": How Living Beings Perceive the World  
Paris, February 18, 2008

### Alzheimer's disease

- Immunological Aspects of Alzheimer's Disease and Brain Amyloidosis  
Angers, September 14, 1987
- Genetics and Alzheimer's Disease  
Paris, March 25, 1988
- Neuronal Grafting and Alzheimer's Disease: Future Perspectives  
Montpellier, September 19, 1988
- Biological Markers of Alzheimer's Disease  
Toulouse, April 24, 1989
- Imaging, Cerebral Topography and Alzheimer's Disease  
Lille, October 16, 1989
- Growth Factors and Alzheimer's Disease  
Strasbourg, April 25, 1990
- Neurophilosophy and Alzheimer's Disease  
San Diego, January 11, 1991
- Heterogeneity of Alzheimer's Disease  
Marseille, April 6, 1992
- The  $\beta$ -Amyloid Protein Precursors in Development, Aging and Alzheimer's Disease  
Lyon, June 21, 1993
- Alzheimer's Disease: Lessons from Cell Biology  
Paris, April 25, 1994
- Apolipoprotein E and Alzheimer's Disease  
Paris, May 29, 1995
- Connections, Cognition and Alzheimer's Disease  
Paris, May 20, 1996
- Presenilins and Alzheimer's Disease  
Paris, April 28, 1997
- Epidemiology of Alzheimer's Disease: from Gene to Prevention  
Paris, May 11, 1998
- Fatal Attractions within Neurons: Intracytoplasmic Protein Aggregates in Alzheimer's Disease and Related

### Neurodegenerative Disorders

- Paris, April 12, 1999
- Neurodegenerative Diseases: Loss of Function through Gain of Function  
Paris, February 28, 2000
- Notch from Neurodevelopment to Neurodegeneration: Keeping the Fate  
Paris, March 19, 2001
- Immunization Against Alzheimer's and other Neurodegenerative Diseases  
Paris, March 13, 2002
- The Living Brain and Alzheimer's Disease  
Paris, March 17, 2003
- Genotype - Phenotype correlations in Dementia  
Paris, September 13, 2004
- Alzheimer: 100 Years and Beyond  
(in collaboration with Tübingen University)  
Tübingen, November 2-5, 2006
- Synaptic Plasticity and the Mechanism of Alzheimer's Disease  
Paris, April 16, 2007
- Intracellular Traffic and Neurodegenerative Disorders  
Paris, April 28, 2008

### Vascular Tree

- Origins and Regeneration of the Vascular Tree  
Paris, October 18, 2004
- Life and Death of the Vascular Tree  
Paris, October 17, 2005
- The Vascular Tree Aflame !  
Paris, October 9, 2006
- Angiogenesis and Neurogenesis  
Paris, October 22, 2007

### Cancer Science

- Can Cancer Be Treated as a Chronic Disease?  
Agra, February 14-15, 2005
- Are Inflammation and Cancer Linked?  
Cape Town, February 12-15, 2006
- Metastasis and Invasion  
Spineto, May 20-23, 2007
- Metabolism and Cancer  
Costa Rica, March 9-12, 2008

### Endocrinology

- Brain Somatic Cross-Talk and the Central Control of Metabolism  
Paris, January 28, 2002
- Endocrine Aspects of Successful Aging : of Genes, Hormones and Lifestyles  
Paris, December 2, 2002
- Hormones and the Brain  
Paris, December 8, 2003
- Deciphering Growth  
Paris, December 6, 2004
- Insights into Receptor Function and New Drug Development Targets  
Paris, December 5, 2005
- Hormonal Control of Cell Cycle  
Paris, December 4, 2006
- Hormones and Social Behavior  
Paris, December 3, 2007

### Longevity

- Longevity: to the Limits and Beyond  
Paris, April 19, 1996
- The Paradoxes of Longevity  
Paris, March 23, 1998
- Sex and Longevity: Sexuality, Gender, Reproduction, Parenthood  
Paris, October 18, 1999
- Brain and Longevity  
Paris, October 8, 2001
- Frailty and Longevity  
Paris, October 11, 2004

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Colloques Médecine et Recherche • NEUROSCIENCES

## Neurobiology of "Umwelt": How living beings perceive the world

*Neurobiologie de l' "Umwelt" :  
comment les êtres vivants  
perçoivent le monde*

Paris - February 18, 2008



## Informations

### Organizing secretariat

Secrétariat d'organisation

FONDATION IPSEN  
Astrid de Gérard  
24, rue Erlanger 75016 Paris  
Tél. : 33 (0)1 44 96 10 10  
Fax : 33 (0)1 44 96 11 99

### Venue

Lieu

Espace Charles-Louis-Havas  
136, avenue Charles-de-Gaulle  
92200 Neuilly-sur-Seine\*  
Parking public à 20 mètres  
Métro : Pont de Neuilly

\* Neuilly-sur-Seine is located close  
to the Porte Maillot in Paris

### Official language

Langue officielle

English  
Anglais

### Posters

Communications affichées

Abstracts for posters should be submitted before  
January 1, 2008 by e-mail (as an attached document) to :  
dominique.couzy@ipsen.com  
*Les abstracts des posters doivent être soumis d'ici le  
1<sup>er</sup> janvier 2008, par e-mail (en pièce attachée) à :*  
dominique.couzy@ipsen.com

### Lunch

Déjeuner

Served on site  
Servi sur place

### Accommodation

Hôtel

You will receive, along with your registration receipt,  
a list of hotels located close to the venue of the meeting  
*Vous recevrez, avec votre accusé d'inscription,  
une liste d'hôtels proches du lieu de la réunion*

## Neurobiology of "Umwelt": How living beings perceive the world

Paris, February 18, 2008

## Scientific Program

**Scientific Committee :** **Alain Berthoz** (Collège de France, Paris)

**Yves Christen** (Fondation IPSEN, Paris)

**8:00 am** Registration : Espace Charles-Louis-Havas  
136, Avenue Charles-de-Gaulle, 92200 Neuilly-sur-Seine

**8:30 am** **Alain Berthoz, Yves Christen:** Welcoming remarks

**8:45 am** **Anne Fagot-Largeau** (Collège de France, Paris)  
Participation to be confirmed

**9:15 am** **Susan A. Gelman** (University of Michigan, Ann Arbor)  
Essentialist reasoning about the biological world

**9:45 am** **Alain Berthoz** (Collège de France, Paris)  
The human brain "projects" upon the world simplifying principles and rules for perception and action.

**10:15 am** Posters and Coffee break

**10:45 am** **Rodolfo Llinas** (New York University Medical Center, New York)  
Umwelt from the perspective of thalamo-cortical evolution

**11:15 am** **Wolf Singer** (Max-Planck Institute for Brain Research, Frankfurt)  
The brain's view of the world depends on what it has to know about the world

**11:45 am** **Gérald Jacobs** (University of California Santa Barbara, Santa Barbara)  
How mammals color the world: the biology of variations in color vision

**12:15 pm** Lunch

**2:00 pm** **Robert M. Seyfarth** (University of Pennsylvania, Philadelphia)  
How monkeys see the world

**2:30 pm** **Brian Hare** (Max-Planck Institute for Evolutionary Anthropology, Leipzig)  
From nonhuman to human ape: what is the effect of affect on the hominoid umwelt?

**3:00 pm** **Juliane Kaminski** (Max-Planck Institute for Evolutionary Anthropology, Leipzig)  
I know what you mean: Dog's understanding of human forms of communication

**3:30 pm** Posters and Coffee break

**4:00 pm** **Nicola S. Clayton** (University of Cambridge, Cambridge)  
What do crows know about other minds and other times?

**4:30 pm** **Richard A. Holland** (Princeton University, Princeton)  
Blind as a bat? The sensory basis of orientation and navigation at night

**5:00 pm** **Tim Ingold** (University of Aberdeen, Aberdeen)  
Sensory pathways through the weather-world: movement, flux and perception

**6:00 pm** Conclusion

### NEUROBIOLOGIE DE L' "UMWELT" : COMMENT LES ÊTRES VIVANTS PERÇOIVENT LE MONDE

Au début du XX<sup>e</sup> siècle le biologiste allemand Jakob von Uexkhüll a élaboré la notion d'Umwelt (Umwelt und Innenwelt der Tiere a été publié en 1909), pour désigner l'environnement vécu par le sujet. Ce concept d'environnement se distingue de l'idée d'un traitement passif de l'information physique du milieu et suggère plutôt que le cerveau construit un « univers subjectif », un espace chargé de sens. Dans cette perspective, l'organisme vivant, fut-il rudimentaire à l'exemple de la tique étudiée par von Uexkhüll, élabore son propre univers quand il interagit avec le monde et en même temps il le reconfigure. Aujourd'hui, les neurosciences permettent d'aborder de façon renouvelée cette capacité du cerveau à interagir avec le monde. En même temps, les spécialistes du comportement mettent en évidence une richesse de l'univers mental animal jusqu'alors insoupçonnée. Ce concept a aussi trouvé récemment un écho dans des découvertes relatives au cerveau humain qui mettent le doigt sur le fait que la perception résulte d'une activité « projective » à travers laquelle le cerveau spécifie des règles d'analyse de l'environnement qui configurent notre connaissance a priori du monde mais limitent aussi ce que nous percevons. De plus, le fait que l'action est ce qui dicte l'organisation de la perception et l'importance des mécanismes dits « top-down » suggèrent que le cerveau humain a aussi son « Umwelt ». La réflexion philosophique suscitée par les découvertes des neurosciences est également stimulée par ces nouvelles observations empiriques. C'est la raison pour laquelle nous avons choisi de rassembler autour du thème de l'Umwelt des neurobiologistes, des psychologues, des sociologues, des anthropologues, des éthologues et des philosophes.

**Alain Berthoz** (Collège de France, Paris)  
**Yves Christen** (Fondation IPSEN, Paris)

### NEUROBIOLOGY OF "UMWELT": HOW LIVING BEINGS PERCEIVE THE WORLD

At the beginning of the 20th century, German biologist Jakob von Uexkhüll created the concept of Umwelt to denote the environment as experienced by a subject. This concept of environment differs from the idea of passive surroundings and is defined not just by physical surroundings, but rather is a "subjective universe", a space weighted with meaning. Based on this perspective, a living organism, no matter how basic (such as the tick studied by von Uexkhüll), creates its own universe when it interacts with the world and as this same time the organism reshapes it. Today, neuroscience provides a new way to look at the brain's capability to create a representation of the world. At the same time, behavioral specialists are demonstrating that animals have a richer mental universe than previously known. Philosophical reflection thus finds itself with more experimental and objective data as well. This is why we have chosen the theme of Umwelt, nearly a century after the publication of von Uexkhüll's founding work (Umwelt und Innenwelt der Tiere was published in 1909), to bring together neurobiologists, psychologists, sociologists, anthropologists, ethologists, and philosophers.

**Alain Berthoz** (Collège de France, Paris)  
**Yves Christen** (Fondation IPSEN, Paris)