Ciencia
y Tecnología

24

31 **august** to 3 **september**

UIMP

Universidad
Internacional
Menéndez Pelayo

ENCUENTRO

III CINET International Workshop

BIOLOGICAL COGNITION AND 'ARTIFICIAL INTELLIGENCE'

Cursos de verano **Santander**

Horario y dirección de contacto

Mañana de L a V: 9.00 a 14.00 h

Santander
Campus de Las Llamas
Avda. de los Castros, 42
39005 Santander
Tlf.: 942 29 87 00

Madrid
C/ de Isaac Peral, 23
28040 Madrid
Tlf.: 91 592 06 31 / 33

A partir del 17 de junio

Mañana de L a V: 9.00 a 14.00 h
Tarde de L a J: 15.30 a 18.00 h

Santander
Palacio de la Magdalena
39005 Santander
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Este curso es susceptible de ser reconocido como formación permanente del profesorado para el personal docente de los centros que imparten las enseñanzas reguladas en la Ley Orgánica 2/2006, de Educación, en base al artículo 21 y 29 de la Orden EDU/2886/2011, de 20 de octubre, por la que se regula la convocatoria, reconocimiento, certificación y registro de las actividades de formación permanente del profesorado.

Código 65QH

Dirección

Javier Bernácer
Director Científico del Centro Internacional de Neurociencia y Ética (CINET)
Fundación Tatiana Pérez de Guzmán el Bueno
Grupo Mente-Cerebro del Instituto Cultura y Sociedad (ICS)
Universidad de Navarra

The third CINET international workshop will delve into the unique aspects of human cognition as revealed by comparison with 'artificial intelligence' (AI). Whether in academic, industrial, or political circles, there is a growing recognition of the extraordinary impact that AI will have, and is already having, on human life. Activities that only a few years ago were the exclusive domain of humans—such as medical decision making, artistic creation, caregiving—are now being assigned to artificial systems. In some cases the benefits of AI are clear, but even their creators admit that we do not understand these systems well enough to predict what their long-term impact will be. The 'alignment problem' refers to widespread concern for the unforeseeable consequences of depending on AI systems without understanding how they diverge from human minds. The 'alignment problem' is not just about AI, however. As argued by neuroscientist Rafael Yuste, we cannot hope to solve the alignment problem if we cannot say what 'natural intelligence' is. Beyond the enormous regulatory and policy challenges presented by AI, then, there is an urgent need for interdisciplinary reflection on the differences between living systems and machines and the kinds of 'intelligence' they support—on the difference between biological cognition and AI.

Apertura matrícula
Desde el día 8 de abril de 2024
(plazas limitadas)

Solicitud
online

From August 31 to September 3, 2024, in Santander (Spain), CINET will host an invitation-only workshop in which these questions will be explored by world-leading researchers in multiple fields of neuroscience and philosophy. As in previous workshops, the program includes a mixture of round tables and traditional talks, but in all sessions our goal is to have a rich and open conversation in which all participants are involved.

The workshop will open with a round table discussion of The Blind Spot: Why Science Cannot Ignore Human Experience (MIT, 2024) led by Evan Thompson, one of the book's authors. Much of the debate over AI revolves around the question of whether AI systems can be conscious, and also the question of whether and in what sense consciousness is essential to intelligence. But how is it possible to decide these questions on scientific grounds when science has systematically excluded experience from its world view? As indicated by its title, Thompson's book is the ideal launching point for the conversation we hope to have together at this workshop.

Sunday's activities begin with a session on the distinctiveness of the human mind as examined from an unusual angle: rather than focus on allegedly unique capacities such as language, we will explore the distinctive challenges, pitfalls and maladies of the human mind. This approach is especially appropriate for our main theme. As AI systems surpass human performance in an increasing number of domains, it seems that what most clearly distinguishes human intelligence is not any special capacity so much as our propensity for error, our fragility and our vulnerability, including the many mental illnesses to which we are prone. On Sunday afternoon, the conversation will turn to another distinctive feature of the human mind: its deeply relational, social, or intersubjective nature. Perhaps the greatest impact of AI to date is social, as relations of family, friends, community, and work have been profoundly transformed by the use of smartphones and other AI-based technology. Now, as companies develop AI teachers, caregivers, therapists, and other companions, we are rapidly nearing a future in which many people will have more daily interactions with AI than with other humans. To understand the impact of this change, we have to understand the essentially social nature of the human mind: the role of sociality in embryonic and early postnatal development, the role of sociality in learning and the development of personal identity, and the role of sociality in mental illness, treatment, and health.

On Monday our conversation turns to consider the brain as the organ par excellence of biological cognition, and we continue our exploration of the relationship between consciousness and intelligence from the perspective of neuroscience. In the first of these sessions, we take up a different angle on main theme of the workshop by focusing on the thermodynamic nature of brain dynamics and living systems in general. While information-theoretic concepts are commonly employed to explain both life-based cognition and machine-based AI, thermodynamics might be a more helpful way to distinguish between these systems. Are the thermodynamic features of living organisms essentially different from those of artificial systems? Do living brains selectively utilize noise to alter their dynamic landscape and the number of attractors? Is the subtle relationship between thermodynamics and information fundamentally different between living brains and AIs? Might the emergence of consciousness and its relation to biological cognition be better understood from a thermodynamic standpoint? Finally, in the afternoon, we consider the history, present, and future of the relationship between neuroscience and computational theory. Since the birth of AI, thinking about brains and machines has been somewhat circular—at least in the scientific mainstream—as evidenced by neurobiology-inspired AI networks and the prevalence of computational approaches in neuroscience. After a round table of the pros and cons of computational neuroscience, historian and philosopher of science Mazviita Chirimuuta will guide us through the use of computational metaphors in brain science as revealed in her latest book, The Brain Abstracted: Simplification in the History and Philosophy of Neuroscience (MIT 2024).

On Tuesday the workshop will merge with the Summer School organized by CINET in Santander, where students will gather to seek a better understanding of mental disorders through dialogue between brain-centered and phenomenological perspectives.

ATTENDANTS TO THE WORKSHOP

Barrett, Nathaniel (Universidad de Navarra)
Bernacer, Javier (CINET)
Cavada, Carmen (Universidad Autónoma de Madrid)
Chanes, Lorena (Universidad Autónoma de Barcelona)
Chirimuuta, Mazviita (University of Edimburgh / University of Pittsburgh)
Chis-Ciure, Robert (CINET/ New York University)
Froese, Tom (Okinawa Institute of Science and Technology)
Fuchs, Thomas (University of Heidelberg)
Gallagher, Shaun (University of Memphis)
García-Cabezas, Miguel Ángel (Universidad Autónoma de Madrid)
Güell, Fran (Universidad de Navarra)
Horga, Guillermo (Columbia University)
Kelso, Scott (Florida Atlantic University / University of Ulster)
Madirolas, Gabriel (CINET / University of Toulouse)
Muñoz, José Manuel (CINET)
Murillo, José Ignacio (Universidad de Navarra)
Noë, Alva (Berkeley University)
Northoff, Georg (University of Ottawa)
Pérez-Marcos, Moisés (CINET / Universidad de Sevilla)
Raczaszek-Leonardi, Joanna (University of Warsaw)
Saez, Ignacio (Mount Sinai Hospital)
Sánchez-Cañizares, Javier (Universidad de Navarra)
Schechtman, Marya (University of Illinois in Chicago)
Sepulcre, Jorge (Yale University)
Thompson, Evan (University of British Columbia)
Todd, Rebecca (University of British Columbia)
Tse, Peter (Dartmouth University)
Vanney, Claudia (Universidad Austral)
Zahavi, Dan (University of Copenhagen)

Saturday 31 evening

17.30 h Presentation of the workshop

17.45 h *The place of human experience in science.* A colloquium on "The Blind Spot," by Adam Frank, Marcelo Gleiser and Evan Thompson. **Participants:** Evan Thompson, Claudia Vanney, Tom Froese, Mazviita Chirimuuta.

Sunday 1

The human mind as revealed by its challenges, pitfalls and maladies

09.00 h *The valuative nature of experience and the 'alignment problem' for humans* (Nathaniel F. Barrett)

10.15 h Coffee break

10.45 h Round Table #1: *Disorders of affect, attention and selfhood as viewed from the perspectives of phenomenology, philosophy and cognitive neuroscience.* **Participants:** Shaun Gallagher, Rebecca Todd, Dan Zahavi. Moderator: Nathaniel Barrett.

12.30 h *Rage against the machine: Substitution, Authority, and Resistance* (Alva Noë)

13.30 h Lunch break

Intersubjectivity and human uniqueness

15.00 h *Social-interactive aspects of sense-making in humans* (Joanna Rączaszek-Leonardi)

16.45 h Round Table #2: *Human-human interactions in embryonic development, personal identity and therapy.* **Participants:** Fran Güell, Marya Schechtman and Thomas Fuchs.

18.15 h Wrap-up session

Monday 2

Thermodynamics: Living Brains vs Artificial Intelligences

09.00 h *Brain thermodynamics and the concept of information* (Javier Sánchez-Cañizares)

09.30 h *Updates on the Irruption Theory of Consciousness* (Tom Froese)

10.15 h Coffee break

10.45 h Round Table #3: *Thermodynamics: Living brains vs artificial intelligences.* **Participants:** Tom Froese, Lorena Chanes, Scott Kelso. Moderator: Javier Sánchez-Cañizares.

12.30 h *The evolution of consciousness and the brain circuits that subserve consciousness* (Peter U. Tse)

13.45 h Lunch break

Brains, computers and metaphors

15.15 h Round Table #4: *The pros and cons of computational neuroscience.* **Participants:** Jorge Sepulcre, Ignacio Sáez, Guillermo Horga.

17.00 h *The Brain Abstracted* (Mazviita Chirimuuta)

18.30 h *Putting together world, brain and consciousness* (Georg Northoff)

Tuesday 3

Summer School: Towards a better understanding of mental disorder: exploring the common space between neurobiology and phenomenology

09.30 h *Presentation of the course by academic authorities*

10.00 h *Why does mental illness exist? Reflections on human vulnerability* (Thomas Fuchs)

11.15 h Round table: *The need for a shared space to understand mental illness.* **Participants:** Marya Schechtman, Scott Kelso and Georg Northoff.

13.00 h Lunch break

14.30 h *Neurobiological bases of schizophrenia* (Guillermo Horga)

16.15 h *Phenomenology of schizophrenia* (Shaun Gallagher)