

Kia Nobre receives C.L. de Carvalho-Heineken Prize for Cognitive Science 2022



Kia Nobre
Photo: Bram Belloni



Amsterdam, 8 June 2022 – Kia Nobre, professor of Translational Cognitive Neuroscience at the University of Oxford, will be awarded the C.L. de Carvalho-Heineken Prize for Cognitive Science 2022. The award honours her innovative approach to imaging and understanding the human brain as well as the impact of this work on numerous subfields of cognitive neuroscience, including attention, working memory, long-term memory, and language.

The Heineken Prizes are the Netherlands' most prestigious international science prizes. Every two years they are awarded to five distinguished researchers. The Royal Netherlands Academy of Arts and Sciences is responsible for the nomination and selection process. During the first week of June, a 2022 laureate will be announced every weekday. Previous laureates of the C.L. de Carvalho-Heineken Prize for Cognitive Science include Robert Zatorre (2020) and Nancy Kanwisher (2018). The award was established in 2006 by Charlene L. De Carvalho-Heineken.

In her research, Nobre emphasises the crucial role of memory in directing attention and behaviour

About the study

Nobre studies how our brains combine signals from our environment and our memory to shape experiences and direct perception, attention, language, and behaviour. Among other things, she focuses on how our brain can concentrate on the most relevant signals from the environment and the relevant items in our short-term memory. She explains: *'At its core, selective attention is the prioritisation and selection of relevant information by our brain to anticipate and modify our behaviour. At any given moment, there is a gigantic number of signals available, coming from external stimuli from our surroundings and internal stimuli such as memories. These signals are constantly competing to be processed in the brain. Selecting and synthesising the most relevant signals amidst all these distractions is essential for building coherent sensory perception, understanding and producing language, and accomplishing everyday tasks like cooking or driving.'*

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Nobre's research group has played a major role in developing knowledge of the structure of the brain's attentional control network. Among other things, she discovered that the brain can make predictions about the timing of relevant events, and that these predictions determine where we focus our attention and, so, influence our perception. Nobre recently developed new methods to study how long-term memories affect our perception. Nobre uses the knowledge she gains about the brain to research what happens in the case of neurodegenerative diseases. The knowledge of how the brain processes information and creates a mental experience is of great importance for education, for example.

Jury praises pioneering role in cognitive science

The jury, with chair Roshan Cools, professor of cognitive neuropsychiatry at Radboud University Nijmegen and the Donders Institute for Brain, Cognition, and Behaviour, is impressed not only by the depth but also by the breadth of Nobre's research, and its impact. It has identified her as a pioneering and distinguished researcher who has helped to pioneer the transition from cognitive psychology to cognitive neuroscience. Nobre was among the first to use several revolutionary techniques to image the brain. For example, early in her career, she measured brain activity via electrodes in the brains of epilepsy patients who had had these electrodes implanted. This led to the discovery of new areas of the brain that play a role in processing words, a major breakthrough in understanding the language network in the human brain. The jury also recognises her commitment to promoting diversity and inclusion, for her exceptional mentoring and leadership skills, and calls her a role model for women scientists.

About Kia Nobre

Kia Nobre (Rio de Janeiro, 1963) grew up in Rio de Janeiro and studied neuroscience at Williams College in Williamstown. In 1993, she received her PhD in neuroscience from Yale University. After a postdoc at Yale and a research position at Harvard Medical School, she moved to the United Kingdom in 1994. She became a faculty member of the Department of Experimental Psychology and a tutorial fellow at the University of Oxford, and was promoted to professor of Cognitive Neuroscience in 2006. Since 2010, she has been director of the Oxford Centre for Human Brain Activity. In 2014, she became the first Chair of Translational Cognitive Neuroscience. Nobre is a member of the British Academy, Academia Europaea, and National Academy of Sciences in the USA. In addition to the C.L. de Carvalho-Heineken Prize for Cognitive Science, awards she has received include the MRC Suffrage Science Award, the Broadbent Prize, and the APS Mentor Award.