



# FOUNDATIONAL CAPACITIES & ARITHMETICAL DEVELOPMENT.

A TALK BY **BRIAN BUTTERWORTH**

**UNIVERSITY COLLEGE LONDON**

# 22

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# 14:30

AULA SEMINARI VIMM  
FONDAZIONE RICERCA  
BIOMEDICA AVANZATA  
VIA ORUS, 2  
PADOVA

Like many other species, humans, even in infancy, possess a mechanism for extracting numerosity information from the environment, which I have called a foundational capacity. This mechanism is domain-specific, is implemented in a dedicated mechanism and is innate. I argue that the efficient working of this capacity is necessary for typical arithmetical development, and if it works inefficiently, this is sufficient for atypical development – dyscalculia.

**Brian Butterworth**, is in the Institute of Cognitive Neuroscience at University College London, where he is currently working on the neuroscience and the genetics of mathematical abilities and disabilities. He led two European networks, Neuromath and Numbra, that promoted multidisciplinary research on mathematical cognition. At UCL, he created the first master's degree in cognitive neuroscience, and founded, and was first chair of, the Centre for Educational Neuroscience.



He holds professorial positions at National Chengchi University, Taiwan, and at Melbourne University, Australia. He was elected Fellow of the British Psychological Society in 1993, and Fellow of the British Academy in 2002. His popular science book, *The Mathematical Brain* (1999) was a best seller. *The Dyscalculia Screener* (2003) revolutionized the identification of this specific learning disability. He co-edited with Denis Mareschal and Andrew Tolmie, *Educational Neuroscience*, published by Wiley in 2013. His latest book, *Dyscalculia: from science to education*, will be published by Routledge in 2018.



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