

BIOGRAPHICAL SKETCH

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NAME Maria Concetta Morrone	POSITION TITLE Professor		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Pisa University	BSc (cum Laude) in Physics	1977	Bio-Physics
<i>Scuola Normale Superiore, Pisa</i>	Doctoral Fellowship in biophysics	1977-1981	Neurophysiology
<i>Universitätsgesellschaft, University of Ulm, Germany</i>	Fellowship	1978	Eye-movements and neurophysiology
"National Research Fellowship", Australian Department of Science, Dep of Psychology, UWA	Fellowship	1984-1986	Neurophysiology and Visual psychophysics
"Queen Elizabeth II", Australian Department of Science", Dep of Psychology, UWA	Fellowship	1987	Visual psychophysics and Computational Neuroscience

A. Personal Statement

From an initial interest in biophysics and physiology, where Maria Concetta Morrone made many seminal contributions, she moved then on to psychophysics and visual perception. Her research career has been dedicated to understanding the function of the mammalian visual system, where she has made many important contributions fundamental in shaping the field. The research involves the study of both humans and animals using a variety of techniques, including psychophysics, electro-physiology, functional brain imaging, computational modelling and artificial intelligence. The simultaneous mastery of all these techniques has made it possible to tackle a wide spectrum of problems, approaching each problem from a different perspective in a truly interdisciplinary manner. Over the years the research has spanned most active areas of vision research, including spatial vision, development, plasticity, attention, colour, motion, robotics, vision during eye movements and more recently multisensory perception and action. Recently she is developing appropriate techniques for ultra-high field (7T) MR for studying BOLD with the resolution of cortical layer, with interest also in pre-clinical research in child neurology, in neuronal disorder in obesity and in Vision Restoration protocols.

B. Positions and Honors

▪ Positions and Employment

- 1981-1995:** *Ricercatore* ("Assistant Professor"), *Scuola Normale Superiore, Pisa.*
- 1995-2000:** *Primo Ricercatore* ("Principal Scientist"), *Istituto di Neurofisiologia CNR, Pisa.*
- 2000** Acting director of the *Istituto di Neurofisiologia CNR.*
- 2000-2008** Professor of Psychophysiology, Faculty of Psychology, *Università Vita-Salute San Raffaele, Milan.*
- 2008-** Professor of Physiology (BIO/09) Medical School, University of Pisa.
- 2008-2017** Part-time Senior Researcher -Robotics, Brain and Cognitive Sciences Department - Italian Institute of Technology (IIT)- Genova
- 2008-2019** Director of Vision Laboratory , IRCCS Fondazione Stella Maris, - Pisa

▪ Other Experience and Professional Memberships

Scientific Advisory Board, (2014- present) Département d'Etudes Cognitives of the Ecole Normale Supérieure, Paris.

Scientific Advisory Board, (2008- present) Fondazione Stella Maris IRCCS – Pisa

Scientific Advisory Board, (2008- present) Fondazione IMAGO 7 (ultra-high field MR centre) - Pisa

Review Board, (2019) Département d'Etudes Cognitives of the Ecole Normale Supérieure, Paris.

Review panel member, European Community – 4th, 5th, 6th and 7th Framework Program (both for *Life Science* and *Information Society Technologies* calls)

Panel Member (2016- 2023) of ERC LS5 Advance Grants

Panel Member (2018- 2022) “The Wellcome Trust”- London - UK

Founding Editor in Chief (2010-2015) of Journal *Multisensory Research*

Founding editor of *Journal of Vision* (2000-2012), the first fully electronic journal in neuroscience.

Elected Member (2021-present) of the “Consiglio di Amministrazione”, University of Pisa.

▪ Honors

1987 Campbell Award from the Australian Neuroscience Society.

2002 Accademia Dei Lincei: "*Premio Nazionale del Ministro per i Beni e le Attività Culturali*" for Physiology and Pathology.

2004 *The Perception Lecture*, European Conference of Visual Perception, Budapest.

2006 Elected member of the International Neuropsychology Symposium

2011 The Koffka Medal in development and perception, Giessen

2014 Awardee of an ERC-IDEA Advanced Grant

2014 Elected Member (*Socio Corrispondente*) of the Accademia dei Lincei – “Classe di Scienze di Fisiche, Matematiche e Naturali, Categoria V - Sezione Fisiologia, Farmacologia e Neuroscienze”.

2019 Ken Nakayama Medal for Excellence in Visual Science from VSS

2023 Elected Member of Academia Europaea, Section: Physiology & Neuroscience

C. Selected Peer-reviewed Publications (15 best peer-reviewed publications)

1. Menicucci D, Lunghi C, Zaccaro A, Morrone MC, Gemignani A. (2022) Mutual interaction between visual homeostatic plasticity and sleep in adult humans. *Elife*. 2022 Aug 16;11:e70633. doi: 10.7554/eLife.70633
2. Kurzwaski JW, Lunghi C, Biagi L, Tosetti M, Morrone MC, Binda P (2022). Short-term plasticity in the human visual thalamus. *Elife*. Apr 6;11:e74565. doi: 10.7554/eLife.74565.
3. Benedetto, Alessandro, Binda, Paola, Costagli, Mauro, Tosetti, Michela, Morrone, Maria Concetta (2021). Predictive visuo-motor communication through neural oscillations. *Current Biology*, ISSN: 0960-9822, doi: 10.1016/j.cub.2021.05.026

4. Ho HT, Burr DC, Alais D, Morrone MC. Auditory Perceptual History Is Propagated through Alpha Oscillations. *Current Biology*. 2019 Dec 16;29(24):4208-4217.e3. doi:10.1016/j.cub.2019.10.041.
5. Binda P, Kurzwski JW, Lunghi C, Biagi L, Tosetti M, Morrone MC. Response to short-term deprivation of the human adult visual cortex measured with 7T BOLD *Elife*. 2018 Nov 26;7. pii: e40014. doi: 10.7554/eLife.40014.
6. Mikellidou K, Kurzwski JW, Frijia F, Montanaro D, Greco V, Burr DC, Morrone MC. Area Prostriata in the Human Brain. *Current Biology*. 2017 Oct 9;27(19):3056-3060.e3. doi: 10.1016/j.cub.2017.08.065. Epub 2017 Sep 28.
7. Ho HT, Leung J, Burr DC, Alais D, Morrone MC. Auditory Sensitivity and Decision Criteria Oscillate at Different Frequencies Separately for the Two Ears. *Current Biology* 2017 Dec 4;27(23):3643-3649.e3. doi: 10.1016/j.cub.2017.10.017. Epub 2017 Nov 16
8. Castaldi E, Cicchini GM, Cinelli L, Biagi L, Rizzo S, Morrone MC. Visual BOLD Response in Late Blind Subjects with Argus II Retinal Prosthesis. *PLoS Biol*. 2016 Oct 25;14(10):e1002569. doi: 10.1371/journal.pbio.1002569.
9. Biagi L, Crespi SA, Tosetti M, Morrone MC (2015) BOLD Response Selective to Flow-Motion in Very Young Infants. *PLoS Biol*. 2015 Sep 29;13(9)
10. Lunghi C, Emir UE, Morrone MC, Bridge H. (2015) Short-Term Monocular Deprivation Alters GABA in the Adult Human Visual Cortex. *Current Biology*. 2015 Jun 1;25(11):1496-501.
11. Zimmermann E, Burr D, Morrone MC. Spatiotopic visual maps revealed by saccadic adaptation in humans. *Curr Biol*. 2011 Aug 23;21(16):1380-4. Epub 2011 Jul 28.
12. d'Avossa, G., Tosetti, M., Crespi, S., Biagi, L., Burr, D.C., & Morrone, M.C. (2007). Spatiotopic selectivity of BOLD responses to visual motion in human area MT. *Nat Neurosci*, 10 (2), 249-255
13. Burr, D., Tozzi, A., & Morrone, M.C. (2007). Neural mechanisms for timing visual events are spatially selective in real-world coordinates. *Nat Neurosci*, 10 (4), 423-425.
14. Morrone, C., Ross, J., & Burr, D. (2005). Saccades cause compression of time as well as space. *Nat Neurosci*, 8:950-954.
15. Perna A, Tosetti M, Montanaro D and Morrone M C (2005) Neuronal mechanisms for brightness perception in humans. *Neuron*. 47:645-651.

D. Research Support

- Ongoing Research Support

ERC- IDEA Advanced Grant (2019-2024) H2020 “GENPERPT” PI: David Burr, Co-Pi

“PRIN Miur” (2020-2023) “Temporal context in perception: serial dependence and rhythmic oscillations”.
UNIPI, PI

“Television” Progetti CNR (2022-2024). “A telemedicine-based intervention of motor training for visual cortex plasticity in juveniles with amblyopia”. PI A. Sale. **Co-Pi**

- Completed Research Support (last 10 years)

“PRIN Miur” (2011-2013) National Coordinator of project: “Neuronal mechanisms for the perception of space, time and number”

“Marie Curie International Outgoing Fellowship” (2011-2014) European Union - 7th Framework Programme – Project “AWESoMe” Coordinator. Beneficiary Dr Paola Binda

ERC- IDEA Advanced Grant (2012-2014) 7th Framework Programme “Space, Time And Number in the Brain STANIB PI David Burr. CO-PI

ERC- IDEA Advanced Grant (2014-2019) 7th Framework Programme “Early Cortical Sensory Plasticity and Adaptability in human adults: ECSPLAIN” 2014-2019. PI

“Marie Curie ITN” – Horizon 2020 (2015- 2019) “Training the Next Generation of European Visual Neuroscientists for the benefit of innovation in health care and high-tech industry” 2015-2019. Italian PI

“Neuron EC”: NEURODREAM (2017-2019) Neuro-Developmental Research on the Etiology of Amblyopia and its Management. Italian PI. Coordinator Jochen Triesch (DE)

Fondazione Roma – (2015-2018) “Cortical Plasticity in Retinitis Pigmentosa: an integrated study from animal models to humans”. PI

“PRIN Miur” (2016-2019) “Adult visual cortex plasticity: from animal models to humans”. PI