

# Ambra Ferrari, PhD

CIMeC – Center for Mind/Brain Sciences  
University of Trento, Rovereto, Italy

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## Professional Experience

<b>01/05/2024 – present</b>	<b>Marie Skłodowska-Curie Postdoctoral Fellow</b>
Affiliation	CIMeC – Center for Mind/Brain Sciences, University of Trento, Rovereto, Italy
Project	Multimodal conceptual knowledge in preverbal infants
Supervisors	Prof. Francesco Pavani, Dr. Eugenio Parise
<b>01/08/2022 – 30/04/2024</b>	<b>Postdoctoral Researcher</b>
Affiliation	Max Plank Institute for Psycholinguistics & Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, The Netherlands
Project	Multimodal integration and prediction in face-to-face communication
Supervisor	Prof. Peter Hagoort
<b>01/01/2020 – 31/07/2022</b>	<b>Postdoctoral Researcher</b>
Affiliation	Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, The Netherlands
Project	Statistical learning and predictive processing in the human brain
Supervisor	Prof. Floris P. de Lange

## Education

<b>23/06/2021</b>	<b>Professional Psychology Certification (Abilitazione Professionale)</b>
	National examination to access the Italian register of psychologists (Albo)
<b>15/09/2015 – 31/12/2019</b>	<b>PhD in Computational Cognitive Neuroscience</b>
Affiliation	Computational Cognitive Neuroimaging Group, School of Psychology, University of Birmingham, Birmingham, United Kingdom
Thesis title	The interplay between attention and multisensory integration
Supervisor	Prof. Uta Noppeney
<b>15/09/2014 – 14/09/2015</b>	<b>Apprenticeship for National Psychology Certification</b>
Affiliation	G.B. Rossi Hospital, Verona; Sant'Agostino Estense Hospital, Modena, Italy
Activity	Clinical neuropsychology assessment and rehabilitation of cognitive disorders following neural damage; cognitive stimulation and monitoring in Alzheimer's Unit; fMRI mapping of linguistic and motor brain areas prior to neurosurgery (epilepsy and neoplasia patients, both adults and children)
Supervisors	Dr. Valentina Varalta; Dr. Francesca Benuzzi
<b>09/09/2014</b>	<b>Master's Degree in Cognitive Neuropsychology and Neuroscience</b>
	Passing Grade: 110/110 (cum laude)
Affiliation	School of Cognitive Science, University of Trento, Rovereto, Italy
Thesis title	Investigating cross-modal plasticity in deafness: an fMRI pilot study on global and biological motion perception
Supervisor	Prof. Olivier Collignon
<b>11/09/2012</b>	<b>Bachelor's Degree in Cognitive Psychology</b>
	Passing Grade: 110/110 (cum laude)
Affiliation	School of Cognitive Science, University of Trento, Rovereto, Italy
Thesis title	Use of a light source for spatial reorientation by the species of fish <i>Danio Rerio</i>
Supervisor	Prof. Valeria Anna Sovrano

## Teaching and Supervision

<b>01/05/2024 – present</b>	<b>Lecturer</b>
Affiliation	CIMeC – Center for Mind/Brain Sciences, University of Trento, Rovereto, Italy
Activity	Guest lecturer in two courses (Cognitive Neuroscience, Developmental Neuroscience) for the MSc Degree in Psychology
<b>01/05/2024 – present</b>	<b>Co-supervisor of undergraduate and graduate students</b>
Affiliation	CIMeC – Center for Mind/Brain Sciences, University of Trento, Rovereto, Italy
Activity	Weekly co-supervision of 1 PhD student and 2 undergraduate students for experimental design, data acquisition, data analysis and manuscript preparation (techniques: online testing; psychophysics; MRI)
<b>01/09/2020 – 30/04/2024</b>	<b>Co-supervisor of undergraduate and graduate students</b>
Affiliation	Max Plank Institute for Psycholinguistics & Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, The Netherlands
Activity	Organization and supervision of training activities for 3 lab rotation undergraduate students; weekly co-supervision of 2 PhD students for experimental design, data acquisition, data analysis and manuscript preparation (techniques: online testing; psychophysics; MRI)
<b>01/10/2017 – 31/07/2018</b>	<b>Co-supervisor of undergraduate students</b>
Affiliation	School of Psychology, University of Birmingham, United Kingdom
Activity	Co-supervision of 1 undergraduate student for research internship and dissertation (techniques: psychophysics; electrodermal activity and pupillometry recordings)
<b>01/10/2016 – 31/07/2017</b>	<b>Teaching assistant</b>
Affiliation	School of Psychology, University of Birmingham, United Kingdom
Activity	Delivery of practical workshops on statistics for undergraduate students
<b>01/10/2013 – 31/07/2014</b>	<b>Teaching assistant</b>
Affiliation	School of Cognitive Science, University of Trento, Rovereto, Italy
Activity	Delivery of practical workshops on statistics for undergraduate students

## Academic Service

<b>08/2023 – present</b>	<b>Review Editor</b>
	Frontiers in Psychiatry – Section Social Neuroscience
<b>12/2021 – present</b>	<b>Ad-hoc reviewer</b>
Activity	Peer-review (Cereb Cortex; Imaging Neurosci; J Cog Neurosci; Psych Science; Ann NY Acad Sci; Neuropsychologia; Front Neurosci; Front Hum Neurosci; J Exp Psy: HPP; Q J Exp Psy; Mult Res; Lang Cogn Neurosci; J Applied Psycholing); External PhD examiner for: CIMeC, University of Trento (Italy); Sapienza University (Italy)
<b>01/10/2021 – 30/09/2022</b>	<b>Postdoctoral representative</b>
Affiliation	Donders Centre for Cognitive Neuroimaging, Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, The Netherlands
Activity	Onboarding of new postdocs; organization of Brown Bag Meetings; co-organization of Donders Career Day 2021; organization of postdocs social activities; organization of postdoc information centre on the institute intranet
<b>01/09/2021 – 31/07/2022</b>	<b>Journal Club organizer and chair</b>
Affiliation	Predictive Brain Lab, Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, The Netherlands
Activity	Organization of annual calendar and chairing of biweekly meetings

## Publications and Manuscripts

### Papers and preprints

**Ferrari, A.**, Filippin, L., Buiatti, M., Parise, E. WTools: a MATLAB toolbox for time-frequency analysis. *bioRxiv*.

Nazli, I., **Ferrari, A.**, Huber-Huber, C., & de Lange, F. P. (2022). Forward and backward blocking in statistical learning. *PLoS One*, 19(8), e0306797.

**Ferrari, A.**, Hagoort, P. (2024). Beat gestures and prosodic stress interactively influence language comprehension. *PsyArxiv*.

Benetti, S.\*, **Ferrari, A.\***, Pavani, F. (2023). Multimodal processing in face-to-face interactions: a bridging link between psycholinguistics and sensory neuroscience. *Frontiers in Human Neuroscience*. 17:1108354.

**\*shared first authorship**

**Ferrari, A.**, Richter, D., & de Lange, F. (2022). Updating contextual sensory expectations for adaptive behaviour. *The Journal of Neuroscience*, 42(47), 8855-8869.

**Ferrari, A.**, & Noppeney, U. (2021). Attention controls multisensory perception via two distinct mechanisms at different levels of the cortical hierarchy. *PLoS biology*, 19(11), e3001465.

Benetti, S., Zonca, J., **Ferrari, A.**, Rezk, M., Rabini, G., & Collignon, O. (2021). Visual motion processing recruits regions selective for auditory motion in early deaf individuals. *NeuroImage*, 230, 117816.

Hickman, L. J., Keating, C. T., **Ferrari, A.**, & Cook, J. L. (2021). Skin conductance as an index of alexithymic traits in the general population. *Psychological Reports*, 00332941211005118.

Beierholm, U., Rohe, T., **Ferrari, A.**, Stegle, O., & Noppeney, U. (2020). Using the past to estimate sensory uncertainty. *eLife*, 9, e54172.

Noppeney, U., Jones, S. A., Rohe, T., **Ferrari, A.** (2018). See what you hear - How the human brain forms representations across the senses. *Neuroforum*, A169-A181.

Lee, S. A., **Ferrari, A.**, Vallortigara, G., & Sovrano, V. A. (2015). Boundary primacy in spatial mapping: Evidence from zebrafish (*Danio rerio*). *Behavioural processes*, 119, 116-122.

### Manuscripts in preparation

**Ferrari, A.\***, Mazzi, G.\*, Mencaroni, M. L., Valzolgher, C., Pavani, F., Benetti, S. Prior expectations guide multisensory integration during face-to-face communication.

Degano, G.\*, **Ferrari, A.\***, Noppeney, U. Audiotactile encoding of music in the human brain.

**Ferrari, A.**, de Lange, Akrami, A. Comparing statistical learning and reinforcement learning: function, computation and neural implementation.

**Ferrari, A.\***, Meijer, D.\*, Noppeney, U. Attention selection and switching in multisensory causal inference.

Chen Y., **Ferrari A.**, Hagoort, P., Bocanegra, B., Poletiek, F. Statistical learning of a hierarchical centre-embedded structure: influence of Zipf distribution and semantic biases.

## Conferences proceedings

**Ferrari, A.**, Degano, G., Noppeney, U. (2024). Audiotactile encoding of music in the human brain. Nanosymposium talk at SfN Neuroscience 2024, Chicago, IL (USA). 05/10/2024 – 09/10/2024

**Ferrari, A.**, Mazzi, G., Mencaroni, M. L., Valzolgher, C., Pavani, F., Benetti, S. (2024). Bayesian Causal Inference governs multisensory integration during face-to-face communication. Poster presented at the Highlights in the Language Sciences Conference, Nijmegen, The Netherlands. 08/07/2024 – 11/07/2024

Poletiek, F., Chen Y., **Ferrari A.**, Hagoort, P., Bocanegra, B. (2024). Statistical learning of a hierarchical centre-embedded structure: influence of Zipf distribution and semantic biases. Talk presented at the Interdisciplinary Advances in Statistical Learning Conference, San Sebastián, Basque Country, Spain. 05/06/2024 – 07/06/2024

Mazzi, G., Mencaroni, M. L., Rabini, G., Tommasini, M., Valzolgher, C., Pavani, F., **Ferrari, A.**, Benetti, S. (2024). Face-to-face social interaction in the human brain: assessing the role of a lateral processing pathway. Poster presented at the Concepts, Actions and Objects (CAOs) Workshop, Rovereto, Italy. 09/05/2024 – 11/05/2024

**Ferrari, A.**, Mazzi, G., Mencaroni, M. L., Valzolgher, C., Pavani, F., Benetti, S. (2024). Prior expectations guide multisensory integration during face-to-face communication. Poster presented at the Concepts, Actions and Objects (CAOs) Workshop, Rovereto, Italy. 09/05/2024 – 11/05/2024

**Ferrari, A.**, Hagoort, P. (2023). Interactive effects of prosody and beat gestures on spoken language comprehension. Talk presented at the 19th NVP Winter Conference on Brain and Cognition, Egmond aan Zee, The Netherlands. 14/12/2023 – 16/12/2023

Chen Y., **Ferrari A.**, Hagoort, P., Bocanegra, B., Poletiek, F. (2023). Learning hierarchical centre-embedded structures: influence of distributional properties of the input. Poster presented at the 19th NVP Winter Conference on Brain and Cognition, Egmond aan Zee, The Netherlands. 14/12/2023 – 16/12/2023

**Ferrari, A.** (2023). How does audiovisual prosody influence spoken language comprehension? Poster presented at the 15th Annual Meeting of the Society for the Neurobiology of Language, Marseille, France. 24/10/2023 – 26/10/2023

**Ferrari, A.** (2023). Towards a neurocognitive model of multisensory processing in face-to-face communication. Talk presented at the 21st International Multisensory Research Forum, Brussels, Belgium. 27/06/2023 – 30/06/2023

Mazzi, G., **Ferrari, A.**, Valzolgher, C., Tommasini, M., Pavani, F., Benetti, S. (2023). Domain-general Bayesian causal inference in multisensory processing of face-to-face interactions. Poster presented at the Concepts, Actions and Objects (CAOs) Workshop, Rovereto, Italy. 04/05/2023 – 06/05/2023

**Ferrari, A.**, Richter, D., & De Lange, F. P. (2022). Updating contextual visual expectations. Talk presented at the European Conference on Visual Perception (ECPV 2022), Nijmegen, The Netherlands. 28/08/2022 – 01/09/2022

Nazli, I., **Ferrari, A.**, Huber-Huber, C., & De Lange, F. P. (2022). Is statistical learning error-driven? Poster presented at the 4th International Conference on Interdisciplinary Advances in Statistical Learning, San Sebastian, Spain. 01/06/2022 – 03/09/2022

Nazli, I., **Ferrari, A.**, Huber-Huber, C., & De Lange, F. P. (2022). Is statistical learning error-driven?. Poster presented at the 18th NVP Winter Conference on Brain and Cognition, Egmond aan Zee, The Netherlands. 28/04/2022 – 30/04/2022

Richter, D., **Ferrari, A.**, & De Lange, F. P. (2022). The neural signatures of incidental and intentional statistical learning. Talk presented at the 18th NVP Winter Conference on Brain and Cognition, Egmond aan Zee, The Netherlands. 28/04/2022 – 30/04/2022

**Ferrari, A.**, & Noppeney, U. (2019). Attention influences how the brain integrates audiovisual signals into spatial representations. Poster presented at the 25th Annual Meeting of the Organization for Human Brain Mapping (OHBM 2019), Rome, Italy. 09/06/2019 – 13/06/2019

**Ferrari, A.** (2019). Neural mechanisms of attention in multisensory decision-making. Talk presented at the Oscillations Workshop, Centre for Human Brain Health, Birmingham, UK. 10/05/2019

**Ferrari, A.** (2018). The interplay between attention and multisensory integration. Talk presented at the Attention & Oscillations Workshop, Centre for Human Brain Health, Birmingham, UK. 16/11/2018

Benetti, S., Zonca, J., Rabini, G., **Ferrari, A.**, Foa, V., Rezk, M., & Collignon, O. (2017). Functional selectivity for visual radial motion processing in the temporal auditory cortex of early deaf individuals. Poster presented at the Ten Years of Mind/Brain Sciences at the University of Trento, Rovereto, Italy. 19/10/2017 – 21/10/2017

**Ferrari, A.**, & Noppeney, U. (2017). Endogenous modality-specific attention influences sensory reliability during multisensory integration. Poster presented at the Ten Years of Mind/Brain Sciences at the University of Trento, Rovereto, Italy. 19/10/2017 – 21/10/2017

**Ferrari, A.**, & Noppeney, U. (2017). The role of endogenous modality-specific attention in multisensory integration. Poster presented at the International Multisensory Research Forum (IMRF 2017), Nashville,

TN, USA. 19/05/2017 – 22/05/2017

**Ferrari, A., & Noppeney, U. (2017).** The role of endogenous modality-specific attention in multisensory integration. Poster presented at the Festival of Neuroscience, British Neuroscience Association (BNA), Birmingham, UK. 10/04/2017 – 13/04/2017

## Organization of Scientific Meetings

Chairing of Nanosymposium "Cross-modal processing in humans" at SfN Neuroscience 2024, Chicago, IL, USA. 05/10/2024 – 09/10/2024.

Organization and chairing of the symposium "Multisensory processing in face-to-face communication" at the 21st International Multisensory Research Forum, Brussels, Belgium. 27/06/2023 – 30/06/2023

Organization and chairing of the symposium "How do we learn and predict structure in the world?" at the 18th NVP Winter Conference on Brain and Cognition, Egmond aan Zee, The Netherlands. 28/04/2022 – 30/04/2022

## Communication and Dissemination

<b>18-19/03/2023</b>	<b>Volunteer at InScience Film Festival</b>
Place	Nijmegen, The Netherlands
Activity	Accreditations and info desk management during annual science film festival
<b>09/09/2022</b>	<b>Guest speaker at Scientificast podcast</b>
Activity	Invited interview on the cognitive neuroscience of multimodal integration and learning by Italian top-chart science podcast (episode 28/11/2022)
<b>23/09/2021</b>	<b>Guest speaker at Youtube channel for science outreach</b>
Activity	Invited live talk on the cognitive neuroscience of learning by Italian Youtube channel dedicated to science dissemination and outreach (IlariaFMATH)
<b>2017 – 2019</b>	<b>Pint of Science event manager</b>
Place	Birmingham, United Kingdom
Activity	Organization of 3 editions of an annual science festival. Tasks: create and manage team of 5 volunteers; find and book 1 venue and 6 speakers; organize and deliver science demos (e.g. perceptual illusions); host event for 3 consecutive evenings
<b>2016 – 2019</b>	<b>Open days volunteer</b>
Place	School of Psychology, University of Birmingham, United Kingdom
Activity	Laboratory demonstrations (piezo-tactile stimulation; eye tracking) during university open days for high school students and their families

## Grants & Awards

<b>2024</b>	<b>SfN Training and Professional Development Award (\$2500)</b> Scholarship awarded based on outstanding academic profile to attend SfN Neuroscience conference in Chicago, USA
<b>2023</b>	<b>Marie Skłodowska-Curie European Postdoctoral Fellowship (€189.000)</b>
<b>2019</b>	<b>Guarantors of Brain Travel Grant (£500)</b> Financial support to attend OHBM conference in Rome, Italy
<b>2016</b>	<b>Merit prize (€2,700)</b> Scholarship awarded for outstanding achievement during course of study (MSc)
<b>2014</b>	<b>Merit prize (€2,700)</b> Scholarship awarded for outstanding achievement during course of study (BSc)

## Skills

**Trainings** Donders Centre for Cognitive Neuroimaging (Nijmegen, NL): 3T Siemens MRI scanner operator qualification (2021: ~80h scanning)  
Centre for Human Brain Health (Birmingham, UK): 3T Philips MRI scanner operator qualification (2017-2019: ~150h scanning)

Technical Knowledge	Program	Area	Knowledge
	MATLAB	Programming Language	Advanced
	Python	Programming Language	Good
	Jupyter Notebook	Python Coding Interface	Advanced
	SPM	MRI data analysis	Advanced
	FSL	MRI data analysis	Good
	The Decoding Toolbox	MRI data analysis	Advanced
	FreeSurfer	MRI data analysis	Good
	SPSS	Data analysis	Advanced
	Bambi	Bayesian Modelling	Advanced
	Eyelink	Eye-tracking data acquisition	Advanced
	BIOPAC Student Lab	Physiological data acquisition	Advanced
	PsPM	Psycho-physiological data analysis	Good
	Psychtoolbox	Experiment builder (MATLAB)	Advanced
	NBS Presentation	Experiment builder	Advanced
	OpenSesame	Experiment builder (Python)	Good
	Gorilla	Experiment builder (Online)	Advanced
	Academic Prolific	Experiment recruitment (Online)	Advanced
	PsychoPy	Experiment builder (Python)	Good

**Creative and networking skills** **04/2021 – 06/2022:** Creator and host of joint group meetings for the Predictive Brain lab (PI: Floris P. de Lange). Tasks: design structure of event; establish connection with other labs; organize panel of speakers across labs; host meetings. Established network of PIs: Lucia Melloni, Lars Muckli, Jan Theeuwes, Athena Akrami, Stefan van der Stigchel.  
**07/10/2019:** Creator and host of academic skills workshop “What Next? Career tips for PhD students” at the School of Psychology, University of Birmingham, UK. Tasks: design structure of event; organize panel of speakers; organize refreshments through university funds; host meetings.

**Languages** **Italian** (native speaker); **English** (proficient user)

I authorize the processing of the personal data present in this curriculum vitae in compliance with the Legislative Decree 30 June 2003, n. 196 and the GDPR (EU Regulation 2016/679).

Last modified: 01.11.2024