

# Curriculum Vitae

**ROBERTO BOTTINI**

**Ph.D.**

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Associate Professor  
CIMEC - Center for Mind/Brain Sciences  
University of Trento  
Via delle Regole 101  
38123, Mattarello (TN)  
Italy

## EMPLOYMENT

**May 2019 – Present.** Associate Professor at CIMEC (Center for Mind/Brain Sciences, Trento, Italy).

**June 2017 – March 2019.** Post-Doctoral Fellow at CIMEC (Center for Mind/Brain Sciences, Trento, Italy) and SISSA (School of advanced Studies, Trieste, Italy).

**January 2015 – June 2017.** Post-Doctoral Fellow at CIMEC (Center for Mind/Brain Sciences), University of Trento, Italy.  
Advisor: Dr. Olivier Collignon

**June 2013 – December 2014.** Post-Doctoral Fellow at MoMo Lab, Department of Psychology, University of Milano-Bicocca, Italy.  
Advisor: Dr. Davide Crepaldi

**July 2011 – June 2013.** Post-Doctoral Fellow at the New School for Social Research, Department of Psychology, New York, NY, U.S.A.  
Advisor: Prof. Daniel Casasanto

**January – May 2011.** Visiting researcher. Max Plank Institute for Psycholinguistics, Nijmegen, The Netherlands.

## EDUCATION

**January 2008 – December 2010.** PhD in *Anthropology and Epistemology of Complexity*, University of Bergamo.  
Advisor: Prof. Enrico Giannetto  
Dissertation: *An interdisciplinary study of time in language and mind*. University of Bergamo. Italy.

**July 2010 – November 2010.** Visiting Ph.D student at the Max Plank Institute for Psycholinguistics, Nijmegen, The Netherlands.  
Local Advisor: Prof. Daniel Casasanto

**March – April 2010.** Visiting Ph.D student at the Federal University of Rondonia, Departement of Vernacular Languages, Porto Velho, Brazil.

Local Advisor: Prof. Wany Sampaio

**November – December 2009.** Visiting Ph.D student at the University of Portsmouth, Faculty of Psychology, UK.

Local Advisor: Prof. Chris Sinha

**February – July 2009.** Visiting Ph.D student at the Max Plank Institute for Psycholinguistics, Nijmegen, The Netherlands.

Local Advisor: Prof. Daniel Casasanto

### ***Undergraduate and Master***

**2004 – 2006.** Master's Degree in Clinical Psychology. University of Padova, Faculty of psychology.

Thesis: *The construction of consciousness in the process of communication. The spatialization of beliefs as fundamental step for the development of a Theory of Mind.*

Advisor: Prof. Alessandro Salvini

Final Grade: 110/110 with distinction

**2001 – 2004 .** Undergraduate degree in Psychology. University of Padova, Faculty of Psychology.

Thesis : *Psychoanalysis and Buddhism.*

Advisor: Prof. Ivano Spano

Final Grade: 110/110 with distinction

### **Ph.D. DISSERTATION**

**Bottini, R.** (2011). *An interdisciplinary study of time in language and mind.* University of Bergamo, Bergamo (Italy).

### **BOOKS**

Salvini, A. & **Bottini, R.** (2011). *Il nostro inquilino segreto. La coscienza, psicologia e psicoterapia .* Ponte alle Grazie. Firenze.

### **PAPERS**

Viganò, S., Bayramova, R., Doeller, C., & **Bottini, R.** (2023). Spontaneous eye movements reflect the representational geometries of conceptual spaces *PsyArXiv*

Sigismondi, F., Xu, Y., Silvestri, M., & **Bottini, R.** (2023). Altered grid-like coding in early blind people *bioRxiv*

- Dutriaux, L., Xu, Y., Sartorato, N., Lhuillier, S. & **Bottini, R.** (2023). Disentangling reference frames in the neural compass *bioRxiv*
- Viganò, S., Bayramova, R., Doeller, C., & **Bottini, R.** (2023). Mental search of concepts is supported by egocentric vector representations and restructured grid maps. *Nature Communications*
- Giari G., Vignali L., Xu Y. & **Bottini R.** (2023). MEG frequency tagging reveals a grid-like code during covert attentional movements. *Cell Reports*
- Vignali L., Xu Y., Turini, J., Collignon, O., Crepaldi, D. & **Bottini R.** (2023). Spatiotemporal dynamics of abstract and concrete semantic representations. *Brain & Language*
- Xu, Y., Vignali, L., Sigismondi, F., Crepaldi, D., **Bottini, R.**, Collignon, O. (2023). Supramodal Shape Representation in the Human Brain. *Plos Biology*
- Bottini, R.**, Nava, E., De Cuntis, I., Benetti, S. & Collignon, O. (2022). Synesthesia in a congenitally blind individual. *Neuropsychologia*
- Battal, C., Gurtubay Antolin, A., Rezk, M., Mattioni, S., Bertonati, G., Ocelli, V., **Bottini, R.**, Targher, S., Maffei, C., Jovicich, J. & Collignon, O. *Journal of Neuroscience*
- De Rosa R., Ktori M., Vidal Y., **Bottini R.** & Crepaldi D. (2022). Frequency-Based Neural Discrimination in Fast Periodic Visual Stimulation. *Cortex*
- Bottini, R.**, Morucci P., D'Urso, A., Collignon O., & Crepaldi, D. (2022). The concreteness advantage in lexical decision does not depend on perceptual simulations. *Journal of Experimental Psychology: General*
- Xu, Y., Vignali, L., Collignon, O., Crepaldi, D. & **Bottini, R.** (2021). Brain Network Reconfiguration for Narrative and Argumentative Thought. *Communications Biology*
- Ostarek, M., & **Bottini, R.** (2021). Towards Strong Inference in Research on Embodiment – Possibilities and Limitations of Causal Paradigms. *Journal of Cognition*
- Bottini, R.**, Doeller, FC. (2020). Language experience in cognitive maps and image spaces. *Trends in Cognitive Sciences*
- Bottini, R.**, Doeller, FC. (2020). Knowledge across reference frames: Cognitive maps and image spaces. *Trends in Cognitive Sciences*
- Lucero C., Brookshire G., Sava-Segal C., **Bottini R.**, Goldin Meadow, S., & Casasanto D. (2020). Unconscious number discrimination in the human visual system *Cerebral Cortex*
- Bottini R.**, Ferraro, S., Nigri, A., Cuccarini V., Bruzzone, M. G. & Collignon, O. (2020). Brain regions involved in conceptual retrieval in sighted and blind people, *Journal of Cognitive Neuroscience*, 1-17.
- Mattioni, S., Rezk, M., Cuculiza Mendoza, K.E., Battal, C., **Bottini, R.**, van Ackeren, MJ., Oosterhof, N.N., Collignon, O. (2020). Categorical representation from sound and sight in the ventral occipito-temporal cortex of sighted and blind, *eLife*.

- Morucci P, **Bottini R** & Crepaldi D. (2019). Augmented Modality Exclusivity Norms for Concrete and Abstract Italian Property Words, *Journal of cognition*, 2.1.
- Bottini, R.**, Barilari, M., & Collignon, O. (2019). Sound symbolism in sighted and blind. The role of vision and orthography in shape-sound correspondences, *Cognition*, 185, 62-70
- Crollen V., Spruyt, T., Mahau, P., **Bottini, R.**, and Collignon, O. (2019). How visual experience and task context modulate the use of internal and external spatial coordinate for perception and action, *Journal of Experimental Psychology: Human Perception and Performance*, 45(3), 354.
- Barilari, M., Collignon, O., & **Bottini. R.** (2018). Is red heavier than yellow when you cannot see it? Crossmodal correspondences in sighted and blind, *i-Perception*, 9(1).
- van Ackeren, M., Barbero, F., Mattioni, S., **Bottini, R.** and Collignon, O. (2018). Neuronal populations in the occipital cortex of the blind synchronize to the temporal dynamics of speech, *eLife*, 7, e31640.
- Bottini, R.**, Mattioni S., & Collignon O. (2016). Early blindness impact on the spatial organization of verbal Working Memory. *Cortex*, 83, 271-279
- Bottini, R.**, Bucur, M., & Crepaldi, D. (2016). The nature of semantic priming by subliminal spatial words. Embodied or disembodied? *Journal of Experimental Psychology: General*.
- Bottini, R.**, Crepaldi, D., Casasanto, D., Crollen, V., & Collignon, O. (2015). Space and Time in the Sighted and Blind. *Cognition*, 141, 67-72.
- Casasanto, D. & **Bottini, R.** (2014). Spatial language and abstract concepts. *WIREs Cognitive Science*, 5, 139–149. doi: 10.1002/wcs.1271
- Casasanto, D. & **Bottini, R.** (2014). Mirror reading can reverse the flow of time. *Journal of Experimental Psychology: General*. 143(2), 473-9.
- Bottini, R.** & Casasanto, D. (2013). Space and time in the child's mind: Metaphoric or ATOMIC? *Frontiers in Cognitive Science*.

## BOOK CHAPTERS

- Bottini, R.** & Salvini, A. (2015) La coscienza analogica e i suoi stati modificati. In E. Casiglia (ed.) Trattato di ipnosi e alter modificazioni di coscienza. CLEUP. Padova.
- Bottini, R.** & Kuijsten, M. (2011). Può il linguaggio dar forma alla coscienza? In Salvini, A. & Bottini, R. (Eds.) *Il nostro inquieto segreto. La coscienza, psicologia e psicoterapia* Ponte alle Grazie. Firenze
- Salvini, A. & **Bottini, R.** (2011). Una domanda imbarazzante: La coscienza che cos'è? In Salvini, A. & Bottini, R. (Eds.) *Il nostro inquieto segreto. La coscienza, psicologia e psicoterapia* Ponte alle Grazie. Firenze

**Bottini, R.** & Casasanto, D. (2010). Implicit spatial length modulates time estimates, but not vice versa. *In Spatial Cognition VII*. C. Hölscher, T. F. Shipley, M. Olivetti Belardinelli, J. A. Bateman, & N. S. Newcombe (Eds.), 152 - 162, Berlin Heidelberg: Springer.

Casasanto, D. & **Bottini, R.** (2010). Can mirror-reading reverse the flow of time? *In Spatial Cognition VII*. C. Hölscher, T. F. Shipley, M. Olivetti Belardinelli, J. A. Bateman, & N. S. Newcombe (Eds.), 335-345, Berlin Heidelberg: Springer.

## PEER-REVIEWED CONFERENCE PROCEEDINGS

**Bottini, R.**, Casasanto, D., Nadalini, A., & Crepaldi, D. (2016). Stepping out of the Chinese Room: Word meaning with and without consciousness. *CLiC it*, 78.

**Bottini, R.**, Guarino, C. & Casasanto, D. (2013). Space is special: A domain-specific mapping between time and nontemporal magnitude. In M. Knauff, M., Pauen, N. Sebanz, & I. Wachsmuth (Eds.) *Proceedings of the 35<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 233-238). Austin TX: Cognitive Science Society.

Gijssels, T., **Bottini, R.**, Rueschemeyer, S.A. & Casasanto, D. (2013). Space and Time in the Parietal Cortex: fMRI Evidence for a Neural Asymmetry. In M. Knauff, M., Pauen, N. Sebanz, & I. Wachsmuth (Eds.) *Proceedings of the 35<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 495-501). Austin TX: Cognitive Science Society.

**Bottini, R.** & Casasanto, D. (2010). Implicit spatial length modulates time estimates, but not vice versa. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 1348-1353). Austin, TX: Cognitive Science Society.

Casasanto, D. & **Bottini, R.** (2010). Can mirror-reading reverse the flow of time? In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 1342-1347). Austin, TX: Cognitive Science Society.

## TALKS

**Bottini R.**, (2023). *Structuring knowledge across reference frames*, at XXIX Congresso AIP (Italian Association of Psychology), Key-note Speaker, 18-20/09/2023. **(Invited talk)**

**Bottini R.**, (2023). *Structuring knowledge across reference frames*, at University of Ghent (Belgium), Department of Psychology, 4/07/2023. **(Invited talk)**

**Bottini R.**, (2023). *Representational maps in the hippocampus and the parietal cortex*, at SISSA (Trieste, Italy), 8 June 2022. **(Invited talk)**

**Bottini R.**, (2023). *Structuring knowledge across reference frames*, at Cornell University (Ithaca, NY), Department of Psychology, On-line, 5/06/2023. **(Invited talk)**

- Bottini R.**, (2023). *Structuring knowledge across reference frames*, at University of Hamburg, Institute of Psychology, On-line, 30/05/2023. **(Invited talk)**
- Bottini R.**, (2023). *Structuring knowledge across reference frames*, at Royal Holloway University (London), Department of Psychology, 22/05/2023. **(Invited talk)**
- Bottini R.**, (2023). *Structuring knowledge across reference frames*, at Oxford University, Department of Experimental Psychology, 24/05/2023. **(Invited talk)**
- Bottini R.**, (2023). *Structuring knowledge across reference frames*, at University of Tübingen, Department of Psychology, 27/04/2023. **(Invited talk)**
- Bottini R.**, (2022). *Conceptual spaces across reference frames*, at workshop: Mind the Gap, SISSA (Trieste, Italy), 21-22 June 2022. **(Invited talk)**
- Bottini R.**, (2022). *Cognitive maps in the blind*, at Annual Meeting of the Cognitive Science Society, Toronto, 27-30 July 2022.
- Bottini R.**, (2022). *Spatial memory and conceptual spaces*, at Berlin School of Technology, On-line, 10/02/2022. **(Invited talk)**
- Bottini R.**, (2022). *The space of time*, at European Workshop of Cognitive Neuropsychology (EWCN), On-line, 27/01/2022. **(Invited talk)**
- Bottini R.**, (2021). *A role for cognitive maps in metaphors and analogy?*, at Analogy series seminars, On-line, 14/06/2021. **(Invited talk)**
- Bottini R.**, (2021). *Beyond sensorimotor simulations? Visual knowledge in sighted and blind*, at Max Planck Institute for Psycholinguistics, Nijmegen, NL, 15/06/2021. **(Invited talk)**
- Bottini R.**, (2021). *Causal paradigms in grounded cognition: Congenital blindness as a model system, Grounded and symbolic representations in language processing workshop*, Tübingen, Germany, 08/04/2021. **(Invited talk)**
- Bottini R.**, (2020). *Knowledge across reference frames*, Institut du Cerveau et de la Moelle Epinière (ICM), Paris, France, 10/11/2020. **(Invited talk)**
- Bottini R.**, (2020). *Knowledge across reference frames*, Brunico Summer School, 23/06/2020. **(Invited talk)**
- Bottini R.**, (2019). *Temporal dynamics of conceptual retrieval: A dual stream model*, Weizmann Institute of Tel Aviv, Israel, 31/12/2019. **(Invited talk)**
- Bottini R.**, (2019). *The spatial organization of knowledge beyond hippocampal cognitive maps*, Invited talk at Neuromania, Torun, Poland, 04/09/2019. **(Invited talk)**
- Bottini R.**, (2019). *Different neural networks for conceptual retrieval in sighted and blind*, Invited talk at KAIST-CIMeC Symposium, Rovereto, Italy, 19/04/2019. **(Invited talk)**
- Bottini R.**, (2019). *The spatial representation of time in the mind and brain*, Invited talk at the Workshop 'The Flow of Time', in Venice, Italy, 18-20/01/2019. **(Invited talk)**

- Bottini R.**, (2018). *Different neural networks for conceptual retrieval in sighted and blind*, Invited talk at University of Tübingen, Department of Psychology, Germany, 05/12/2018. **(Invited talk)**
- Bottini R.**, (2017). *The role of consciousness in semantic processing: Insights from masked priming and spatial language*. Spatial Language and Spatial Cognition Workshop, December 6-7, Trondheim, Norway.
- Bottini R.**, (2017). *Space-Time relationships across the senses*. Timing Research Forum. October 23-25, Strasbourg, France.
- Bottini R.**, Casasanto D., Yap D., Crepaldi D., & Collignon O. (2016). *Metaphorical gestures for time in early and late blind*. Seventh Conference of the International Society for Gesture Studies, July 18-22, Paris.
- Bottini R.**, Bucur M., Crepaldi D. (2016). *The nature of semantic priming by subliminal spatial word. Embodied or disembodied?* International meeting of the Psychonomic society, 5-8 May, 2016, Granada (Spain).
- Bottini R.** (2016). *How vision shapes spatial representations of time, numbers and order*. International meeting of the Psychonomic society, 5-8 May, 2016, Granada (Spain).
- Bottini R.**, Mattioni S., & Collignon O. (2016). *Early blindness impact on the spatial organization of verbal Working Memory*, European Workshop on Cognitive Neuropsychology (EWCN), 24-29 Jan 2016 Bressanone (Italy).
- Bottini R.**, (2015). *The role of consciousness in semantic processing. Insights from masked priming*, Invited talk at SISSA, Neuroscience Area, Trieste, Italy, 26/11/2015. **(Invited talk)**
- Bottini R.**, (2015). *The role of consciousness in semantic processing. Insights from masked priming*, Invited talk at Institut du Cerveau et de la Moelle Epinière (ICM), Paris, France, 17/11/2015. **(Invited talk)**
- Bottini R.**, (2015). *The role of consciousness in semantic processing. Insights from masked priming*, Invited talk at University of Geneva, Department of Psychology, Geneva, Switzerland, 16/11/2015. **(Invited talk)**
- Bottini R.**, Bucur, M. & Crepaldi, D. (2015). *The nature of sensorimotor facilitation by subliminal words. Embodied or disembodied?* Embodied and Situated Language Processing (ESLP), 29-30 Jul 2015 Lyon (France).
- Bottini R.**, Crepaldi, D., Casasanto, D., Crollen, V., & Collignon, O. (2015). *Space and Time in the Sighted and Blind*. 16<sup>th</sup> International Multisensory Research Forum, 13-16 Jun, Pisa (Italy).
- Bottini R.**, Crepaldi, D., Casasanto, D., Crollen, V., & Collignon, O. (2015). *Space and Time in the Sighted and Blind*, European Workshop on Cognitive Neuropsychology (EWCN), 25-30 Jan, 2015, Bressanone (Italy).
- Crepaldi D. & **Bottini R.** (2014). *Acoustic and Visual Masked Priming are Both Sensitive to Morphology*. Psychonomic Society's 55th Annual Meeting, Long Beach, LA, USA.

- Bottini R.** & Casasanto, D. (2014). *Beyond ATOM. Space and Time in the Human Mind*. Language, Culture and Mind VI, Lublin, Poland.
- Bottini R.**, Crepaldi, D., Casasanto, D., Crollen, V., & Collignon, O. (2014). *No time in my hands. different spatial coordinates support temporal and numerical concepts in blind and sighted individuals*. Symposium: Embodiment of Abstract Concepts. What's Special About Space. University of Milan-Bicocca, Milano, June 9th 2014. **(Invited talk)**
- Bottini R.** & Casasanto, D. (2013). *Space is special: A domain-specific mapping between time and nontemporal magnitude*. 35<sup>th</sup> Annual Meeting of the Cognitive Science Society, Portland, OR.
- Bottini R.** (2011) *Coscienza, linguaggio e metafore*. La coscienza di sé: Alterità, Trascendenza, Disagio e Psicoterapia, Montegrotto Terme (PD), Italy. **(Invited talk)**
- Bottini R.** (2010). *Walking through time*. 2nd Conference of Clean Language, London. **(Invited talk)**
- Bottini R.** & Casasanto, D. (2010). *Implicit spatial length modulates time estimates, but not vice versa*. Spatial cognition, Mt. Hood/Portland, OR.
- Bottini R.** & Casasanto, D. (2010). *Implicit spatial length modulates time estimates, but not vice versa*. 32<sup>nd</sup> Annual Meeting of the Cognitive Science Society, Portland, OR.
- Bottini R.** & Casasanto, D. (2010). *Implicit spatial length modulates time estimates, but not vice versa*. Language, Culture and Mind IV, Turku, Finland.

## CONFERENCE POSTERS

*A list of conference posters from my lab can be found here:*

<https://docs.google.com/document/d/1vWxrBW0FaoQBWri0ScKTigrtGdadkRhAZsd7nLcsNI/edit?usp=sharing>

## RESEARCH GRANTS

**November 2023.** ERC Consolidator Grant, European Research Council; PI; 1999358 €

**June 2023,** PRIN, (Ministero dell'Istruzione, Università e Ricerca), Responsible of Unit; 249,520

**January 2020.** FARE grant, MIUR (Ministero dell'Istruzione, Università e Ricerca); PI; 299624 €

**July 2018.** ERC Starting Grant, European Research Council; PI; 1498644 €

## TEACHING

**Fall 2019 – Present.** Understanding cognitive psychology and neuroscience (Master level) CIMEc, Trento.

**Spring/Fall 2011.** Teaching Assistant: Experiential Relativity (Prof. Daniel Casasanto), The New School for Social Research, New York, NY

**2015 – 2018.** Ad-Hoc classes on Embodied cognition, Embodied semantics, Numerical cognition and neurobiology of consciousness

## **INSTITUTIONAL RESPONSIBILITIES**

2022 –Member of the executive council (Giunta), CIMEC, University of Trento, Italy.

2021 –Delegate for research activities, CIMEC, University of Trento, Italy.

2020 –Member of the Doctoral school, CIMEC, University of Trento

2019 –Delegate for the relationships between University of Trento and the International School for Advanced Studies (SISSA), Italy.

2019 – Member of the Faculty Committee for Annual Evaluation of the Master Degree in Cognitive Neuroscience, University of Trento, Italy

## **REVIEWING**

**Doctoral dissertations:** 2 between 2019-2023

**Ad-Hoc reviewer for 37 different journals :** Nature Communications; Journal of Neuroscience; Cerebral Cortex; Neuroimage; Neuropsychologia; HBM; PLOS Computational Biology; Journal of Experimental Psychology: General; Journal of Experimental Psychology: HPP; Journal of Experimental Psychology: LMC; Cognition; Cortex; Plos one; Cognitive Psychology; Psychonomic Bulletin & Review; Hippocampus; Consciousness and Cognition; Acta Psychologica; Developmental Science; Quarterly Journal of Experimental Psychology; Attention, Perception, & Psychophysics; Cognitive Science; Frontiers in Psychology; Psychological Research; Frontiers in Integrative Neuroscience; Cognitive Processing; Language & Cognition; Timing and Time Perception; British Journal of Experimental Psychology; Scientific Report; Brain & Language; Behavioral & Research Methods; Journal of Vision; Journal of the International Neuropsychological Society; Language Cognition & Neuroscience; Neuroscience; Plos One.

**Grant Agencies** (3 grants reviewed in the last 3 years): *Israel Science Foundation; Hungary National Research, Development and Innovation Office; Belgian Alzheimer Foundation*

## **COMPUTATIONAL SKILLS**

Programming languages: R, Matlab.

Statistical software: R, SPSS, JASP.

## **LANGUAGE SKILLS**

Fluent: Italian, English, French.

Basic: Portuguese, Spanish