

# Roberta Rocca, PhD, MSc

## Postdoctoral researcher

*Psychoinformatics Lab*  
Department of Psychology  
University of Texas at Austin

**Date of birth:** 17/11/1992

**Mobile:** +1 (512) 647-8764

✉ [roberta.rocca@austin.utexas.edu](mailto:roberta.rocca@austin.utexas.edu)

🐦 @RockBerta

## Research interests

fMRI, Language, Social Cognition, Semantics, Spatial Cognition

## Education and employment

- 12/2019 – ongoing *Postdoctoral researcher*  
**Psychoinformatics Lab**, Dept. of Psychology, **University of Texas at Austin**
- 09/2019 – 10/2019 *Research Assistant*  
**Interacting Minds Centre**, **Aarhus University**, Denmark
- 09/2018 – 02/2019 *Visiting Ph.D. Student*  
**Dept. of Applied Mathematics and Computer Science**, Section for Cognitive Systems,  
**Technical University of Denmark (DTU)**
- 09/2016 – 08/2019 *Early-Stage Researcher*  
**DCOMM** ([www.dcomm.eu](http://www.dcomm.eu)): Marie Skłodowska-Curie ITN – EU H2020 Actions
- 09/2016 – 08/2019 *Ph.D. Student*  
**Dept. of Linguistics, Cognitive Science and Semiotics**, **Aarhus University**, Denmark  
*Thesis title:* The neural correlates of spatial demonstratives (main supervisor: Dr. Mikkel Wallentin)
- 09/2014 – 07/2016 *MSc in Cognitive Science – Language and Multimodal Interaction*  
**Center for Mind and Brain Sciences (CIMEC)**, **University of Trento**, Italy
- 09/2010 – 03/2014 *BA in Philosophy*  
**Department of Humanities**, **University of Palermo**, Italy

## Further research experience

- 07/2019 *Visiting researcher*  
School of Psychology, **University of East Anglia**
- 01/2018 and 11/2018 *Visiting researcher*  
LaCaM Lab – **National Research Council (CNR)** Rome, Italy
- 03/2016 – 07/2016 *Research Assistant*  
Dept. of Experimental Psychology, **University College London**
- 09/2015 – 02/2016 *Research Assistant*  
Language and Cognition Department., **Max Planck Institute for Psycholinguistics**, Nijmegen  
The Netherlands

## Teaching experience

- 09/2019 Guest Lecturer, **Advanced Cognitive Neuroscience**, **MSc in Cognitive Science**, Aarhus University
- Spring 2018 Teaching assistant, **Introduction to Cognitive Neuroscience**, **BSc in Cognitive Science**, Aarhus University
- 04/2018 Guest lecturer, **Social and Cultural Dynamics**, **BSc in Cognitive Science**, Aarhus University
- Fall 2017 **Lecturer and Instructor**, full course in **Cognitive Science**, **MA in Cognitive Semiotics**, Aarhus University
- 12/2017 Instructor, Workshop on **Statistical Analyses in Language Sciences Using R** (staff course), Aarhus University

## Scholarships, Funding and Awards

- 09/2016 – 08/2019 EU Scholarship as **Early-Stage Researcher**, DCOMM: Marie-Skłodowska Curie ITN;
- 01/2018 **Funding for research activities** granted by School for Communication and Culture, AU. (15.000 DKK);
- 01/2017 **Funding for research activities**, granted by Interacting Minds Centre, Aarhus University (25.000 DKK);
- 07/2016 **Post-graduation Excellence Award**, University of Trento (3000 €);
- 03– 07/2016 **Erasmus+ Scholarship for Traineeship**, Dept. of Experimental Psychology, UCL;
- 08/2015 – 02/2016 **Erasmus+ Scholarship for Study**, Radboud University Nijmegen;
- 09/2015 – 08/2016 **Scholarship** from Opera Universitaria Trento

## Other talks

**Spring 2019:** Interacting Minds Centre Seed-Funding Seminar

**Fall 2018:** Project kick-off workshop: "Broken grammar and beyond", University of Copenhagen

**Fall 2018:** Interacting Minds Centre – Research seminar for Masters student in Cognitive Science from University of Amsterdam

**Fall 2018:** Neuroscience meetings, Section for Cognitive Systems, DTU Compute – Technical University of Denmark

**Spring 2018:** Brown Bag meetings at Department of Linguistics, Cognitive Science and Semiotics, Aarhus University

**Spring 2017 and Spring 2018:** PhD Talks, School of Communication and Culture, Aarhus University

## Skills

*Programming languages:* **Matlab** (proficient), **R** (proficient), **Python** (proficient), **PERL** (beginner), **STAN** (beginner)

*Experimental techniques:* fMRI, eye-tracking, behavioral paradigms

*Languages:* **Italian**, Native Speaker; **English**, Excellent; **Danish**, Fluent; **French**, Fluent

*Additional professional skills:* Agent-based modelling (Netlogo), Video and Audio editing (Adobe Suite, Audacity)

*Other interests:* cultural journalism (freelance writer of art and culture reviews), music (bass and piano player), art-house movies

## Additional Training

### Schools

7th Lisbon Machine Learning School, LxMLS, Instituto Superior Técnico (IST) – Lisbon, July 2017;

7th IMPRS/ICN *NeuroCom* Summer School, UCL London, 12-14 July 2017;

6th ILWI Summer School, Kirchberg am Wechsel, August 2014;

7th Summer School in Mind and Language, University of Siena, June 2014.

### Workshops and Courses

DComm Training Course 3: "Working with non-academic beneficiaries", University of Manchester, March 2019

DComm Training Course 2: "Dissemination and Academic Skills", Friedrich Schiller Universität Jena, October 2018

DComm Training School 3: "Individual differences in deictic communication", Norwegian University of Science and Technology (NTNU) Trondheim, August 2018

Workshop on "Advanced Bayesian Statistics", Instructor: Paul Bürkner (WWU Münster), hosted by Interacting Minds Centre, Aarhus University, June 2018

DComm Workshop 2: "Advanced Technologies for Deictic Communication", Institute for Geoinformatics, WWU Münster, March 2017 (Hands-on sessions on marker-based Motion Capture, Virtual Reality, Interactive Video Environments);

DComm Training School 2: "Synergies between Basic Research and Application", ETH Zürich, November 2017;

"Agent-Based Modelling", Instructor: Paul Smaldino (UCMerced); hosted by Interacting Minds Centre – Aarhus University, August 2017;

Bootcamp: "Heart Rate and Galvanic Skin Response as Measures for Assessing Human Experience", Interacting Minds Centre – Aarhus University, May 2017;

DComm Workshop 1: "Advanced Technologies for Deictic Communication" (Robotics), IIT Genoa, April 2017;

DComm Training School 1: "Theoretical Aspects of Deictic Communication", Aarhus University, January 2017;

London SPM Course for fMRI and MRI/VBM, Wellcome Trust Centre for Neuroimaging, London, October 2016;

DComm Training Course 1, Universitat de les Illes Balears, Mallorca, October 2016;

Presentation Programming Workshop, Donders Institute for Brain, Cognition and Behavior, Nijmegen, October 2015;

IMPRS Workshop "Perspectives on the ontogeny of mutual understanding", Max Planck Institute for Psycholinguistics, Nijmegen, October 2015

## Reviewing services

Journal of Experimental Psychology, APA; Journal of Memory and Language, Elsevier; Psychology of Language and Communication, DeGruyter; Nijmegen Cognitive Neuroscience (CNS) Journal

## Other professional contributions

Main organizer **Natural Language Processing Workshop** at IMC, Aarhus University (<http://interactingminds.au.dk/events/single-events/artikel/nlp-workshop-imc-fall-2019/>), November 2019

Member of **organizing committee** for SALC7 – Scandinavian Association for Language and Cognition

**Dissemination activities** at Danish Science Festival 2018, Aarhus University

**Co-organizer of symposium:** "From fieldwork to modelling: Explaining the variability of linguistic spatial referencing systems", 7<sup>th</sup> International Conference on Spatial Cognition (ISCS 2018, Rome) - <http://www.icsc-rome.org/general-info/>

Organizer of **weekly talks** at Department of Linguistics, Cognitive Science and Semiotics, Aarhus University – Fall 2017, Spring 2018

Co-management of official Twitter account for DCOMM - Marie Skłodowska-Curie ITN

## Memberships

Cognitive Science Society; Society for the Neurobiology of Language; Organization for Human Brain Mapping

## Media Outreach

Neuroscience podcast **Brainstorm** (Danish science journalism platform **Videnskab.dk**) on the topic "What happens in the brain when we talk?" (<https://videnskab.dk/krop-sundhed/hvad-sker-der-i-hjernen-naar-vi-taler-sammen>)

## Publication list

**Rocca, R.**, Wallentin, M. (in press). Demonstrative Reference and Semantic Space: A Large-Scale Demonstrative Choice Task Study. *Frontiers in Psychology*

**Rocca, R.**, Coventry, K. R., Tylén, K., Staib, M., Lund, T. E., & Wallentin, M. (2020). Language beyond the language system: dorsal visuospatial pathways support processing of demonstratives and spatial language during naturalistic fast fMRI. *NeuroImage*

**Rocca, R.**, Wallentin, M., Vesper, C., & Tylén, K. (2019). This is for you: social modulations of proximal vs. distal space in collaborative interaction. *Scientific Reports*

**Rocca, R.**, Tylén, K., Wallentin, M. (2019), *This shoe, that tiger*: Semantic properties reflecting manual affordances of the referent modulate demonstratives use, *PlosOne*.

Wallentin, M., **Rocca, R.**, Stoustrup S. (2019), Grammar, gender and demonstratives in lateralized imagery for sentences, *Journal of Psycholinguistic Research*, 1-16

**Rocca, R.**, Wallentin, M., Vesper, C. & Tylén, K. (2018). *This and that* back in context: grounding demonstrative reference in manual and social affordances, *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*;

Wallentin, M., **Rocca, R.**, Stoustrup, S. (2018), Lateralized imagery for sentence content: Testing grammar, gender and demonstratives, *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*;

**Rocca, R.** & Augustin, M. (2016), Gesturing in L2: Evidence for cross-linguistic transfer in the visual modality, in *TwistX Proceedings of the 10th Linguistics Student Conference, Leiden 22<sup>nd</sup> April 2016*, pp. 3-11

Carapezza, M. & **Rocca, R.** (2014), Ceci n'est pas une ontologie: a contribution to a quasi-resolute reading of the *Tractatus Logico-Philosophicus*, in Rinhofner-Kreidl S. & Wilsche H. (eds), *Analytical and Continental Philosophy: Methods and Perspectives. Paper of the 37th Wittgenstein Symposium*, Austrian Ludwig Wittgenstein Society, Kirchberg am Wechsel, pp.46-49

### Preprints:

**Rocca, R.**, Coventry, K. R., Tylén, K., Staib, M., Lund, T. E., & Wallentin, M. (2019). Language beyond the language system: dorsal visuospatial pathways support processing of demonstratives and spatial language during naturalistic fast fMRI. *BioRxiv*, <https://doi.org/10.1101/651257>

**Rocca, R.**, Wallentin, M., Vesper, C., & Tylén, K. (2019). This is for you: social modulations of proximal vs. distal space in collaborative interactions. <https://doi.org/10.31234/osf.io/tazhr>

### In Italian:

Carapezza, M., & **Rocca, R.** (2017). In-seguire la Regola: Giochi Linguistici e Arti Performative. *Rivista Italiana di Filosofia del Linguaggio*, 11(2).

## Talks at Conferences/Workshops

**Rocca, R.**, Wallentin, M., (November 2019). Representing word meaning using cognitive features. *NLP workshop @Interacting Minds Centre*, Aarhus University

**Rocca, R.**, Staib, M., Tylén, K., Coventry, K.R., Wallentin, M. (July 2019). Here and there, what and where. Bilateral network of dorsal regions supports comprehension of spatial demonstratives in naturalistic language processing. *Deictic Communication: Theory and Application*, University of East Anglia

**Rocca, R.**, Staib, M., Tylén, K., Coventry, K.R., Wallentin, M. (May 2019). The neural correlates of spatial deictics: A fast fMRI study using naturalistic auditory stimuli. *SALC7 - Conference of the Scandinavian Association for Language and Cognition*, Aarhus University

**Rocca, R.**, Tylén, K., Wallentin, M. (May 2019). Crocodiles, peace and harmonicas: (how) does word semantics modulate demonstrative use? SALC7 – Conference of the Scandinavian Association for Language and Cognition, Aarhus University

**Rocca, R.**, Rabe, F., Madsen, KH, Siebner H., Lehmann, S., Konvalinka, I. (November 2018), Interpersonal coordination mechanisms in a real-world social network, *Social Cognition Workshop*, The Interacting Minds Centre, Aarhus University

**Rocca, R.**, Wallentin, M., Vesper, C. & Tylén, K. (July 2018). This and that back in context: grounding demonstrative reference in manual and social affordances; Oral presentation at *40th Annual Meeting of the Cognitive Science Society*, Madison, Wisconsin, USA.

Augustin, M., & **Rocca, R.** (April 2016), Gesturing in L2: Evidence for cross-linguistic transfer in the visual modality, Oral presentation: *TWISTx Conference*, Leiden.

**Rocca, R.** & Augustin, M. (March 2016), A cross-cultural study on gestural transfer in Italian, Dutch and English, oral presentation: Annual Juniorendag of the Dutch Society for Applied Linguistics (Anéla), Amsterdam

**Rocca, R.** & Carapezza, M. (August 2014), *Ceci n'est pas une ontologie*: a contribution to a quasi-resolute reading of the *Tractatus Logico-Philosophicus*, oral presentation: 37th ALWS Conference, Kirchberg am Wechsel

## Poster presentations

**Rocca, R.**, Staib, M., Tylén, K., Coventry, K., Lund, T.E., Wallentin, M. (August 2019), Here and there, what and where: investigating the role of the dorsal visuospatial stream in linguistic encoding, Annual Conference of the Society for the Neurobiology of Language, Helsinki, Finland

**Rocca, R.**, Staib, M., Tylén, K., Coventry, K., Lund, T.E., Wallentin, M. (June 2019), Investigating the neural correlates of spatial demonstratives using naturalistic fast fMRI, Organization for Human Brain Mapping Annual Meeting, Rome

**Rocca, R.**, Lund, T.E., Staib, M., Tylén, K., Coventry, K.R., Wallentin, M. (August 2018), Spatial attention and perceptual-motor representations of demonstratives: a fast fMRI study using naturalistic auditory stimuli, *SNL 2018 – Conference of the Society for the Neurobiology of Language*, Québec City, Canada.

Wallentin, M., Lund, T. E., Andersen, C. M., & **Rocca, R.** (August 2018). Fast phonotopic mapping with oscillation-based fMRI– Proof of concept, *SNL 2018 – Conference of the Society for the Neurobiology of Language*, Québec City, Canada.

Wallentin, M., **Rocca, R.**, Stoustrup, S. (July 2018), Lateralized imagery for sentence content: Testing grammar, gender and demonstratives, Poster presentation at *40th Annual Meeting of the Cognitive Science Society*, Madison, Wisconsin, USA.

**Rocca, R.**, Staib, M., Tylén, K., Coventry, K., Lund, T.E., Wallentin, M., *Here and There* around the brain: The role of extra-linguistic spatial representations in the comprehension of spatial deictics

- Brain Prize Meeting 2017, Helsingørsk Castle – Middelfart (Denmark), October/November 2017;
- 7th IMPRS/ICN *NeuroCom* Summer School, University College London, 12-14 July 2017;
- *Language as a Form of Action*, National Research Council (CNR), Rome (Italy), 21-23 June 2017.