

Roberta Rocca, PhD, MSc

Postdoctoral researcher

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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): 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", 7th 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 22nd 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.