

Dr. rer. nat. Catherine-Noémie Alexandrina Guran

Contact Information

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Education

10/2016-03/2020 **PhD, University of Lübeck, Germany. Supervisor: Prof. Dr rer. nat. Nico Bunzeck.** Topic/Title of work: Psychological and neural bases of the retrieval practice effect in younger and older adults. Defense passed with final grade 1.1 (magna cum laude) on 21st of September 2020

2015 – 2016 **Master of Science, Evolutionary and Comparative Psychology, University of St Andrews, Scotland** Master's thesis on the effects of affective information on attractiveness and trustworthiness judgments

10/2012 – 07/2015 **Bachelor of Science in Psychology at the Ruhr-University Bochum, Germany** Title of bachelor thesis (translated from German): Seeing chords and hearing keys: Naming and perception of audiovisually incongruent chords in pianists

2012 **Zentralabitur NRW**, equivalent of A-levels
Focus classes/AP classes: Physics and English

Professional experience, including teaching

07/2020 – present **Postdoctoral researcher** at the Social, Cognitive and Affective Neuroscience Unit and the Vienna Cognitive Science Hub investigating the evolution of social cognition in canines and humans

04/2023 – present External examiner for postgraduate theses at the Webster University Vienna

10/2016 – 03/2020 Researcher at the LifeSpan group under Prof. Nico Bunzeck at the University of Lübeck.
Teaching: Developmental psychology seminars (3 semesters), Experimental practical (1 semester), Music psychology seminar (2 semesters), Evolutionary psychology seminar (2 semesters)

2014 2-month research internship at the Max-Planck-Institute for Cognitive Brain Sciences, Leipzig, researching psychological risk factors for heart disease (Prof. Dr. Arno Villringer)

2013 – 2015 **Student teacher** for undergraduate statistics classes and empirical practicals

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Publications (peer-reviewed) For an updated list of publications, please visit <https://alexandrinaguran.github.io/publications/>

Babayan, A., Erbey, M., Kumral, D., Reinelt, J. D., Reiter, A. M., Röbbing, J., ... **Guran, C. N. A.**, ... & Horstmann, A. (2019). A mind-brain-body dataset of MRI, EEG, cognition, emotion, and peripheral physiology in young and old adults. *Scientific data*, 6.

Guran, C. N. A., Herweg, N. A., & Bunzeck, N. (2019). Age-related decreases in the retrieval practice effect directly relate to changes in alpha-beta oscillations. *Journal of Neuroscience*, 39(22), 4344-4352.

Guran, C. N. A., Lehmann-Grube, J., & Bunzeck, N. (2020). Retrieval Practice Improves Recollection-Based Memory Over a Seven-Day Period in Younger and Older Adults. *Frontiers in Psychology*, 10.

Guran, C. N. A., Deuker, L., Göttlich, M., Axmacher, N., Bunzeck, N. (2022). Benefit from retrieval practice is linked to temporal and frontal activity in healthy young and older humans. *Cerebral Cortex Communications*, 3(1), tgac009.

Alberghina, D., Bray, E., Buchsbaum, D., Byosiere, S. E., Espinosa, J., Gnanadesikan, G., **Guran C.-N.A.**, ... (2023). ManyDogs Project: A Big Team Science Approach to Investigating Canine Behavior and Cognition. *Comparative Cognition and Behavior*.

Guran, C. N. A., Sladky, R., Karl, S., Boch, M., Laistler, E., Windischberger, C., Huber, L. & Lamm, C. (2023). Validation of a new coil array tailored for dog functional magnetic resonance imaging (fMRI) studies. *eNeuro*.

ManyDogs Project, Espinosa, J., Bray, E. E., Byosiere, S. E., Byrne, M. (...) **Guran, C. N. A.**, (...), Zipperling, L. (2023) ManyDogs 1: A MultiLab Replication Study of Dogs' Pointing Comprehension. *Animal Behavior and Cognition*.

Ruiz, M., Groessing, A., **Guran, C. N. A.**, Koçan, A., Kouwer, K., ... & Specht, K. (2023). Design and implementation of a replication study: The Music for Autism (M4A) binational assessor-blinded randomised crossover trial. *Frontiers in Psychiatry*.

Guran, C. N. A., Lonardo, L., Tünste, M., Arzberger, K., Völter, C. J., Hoehl, S., ... & Lamm, C. (2024). Investigating belief understanding in children in a nonverbal ambiguous displacement and communication setting. *Journal of Experimental Child Psychology*, 240, 105830.

Available as preprint

Guran, C. N. A., Boch, M., Sladky, R., Lonardo, L., Karl, S., Huber, L., & Lamm, C. (2023). Functional mapping of the somatosensory cortex using noninvasive fMRI and touch in awake dogs. bioRxiv, 2023-12. <https://biorxiv.org/cgi/content/short/2023.12.22.572785v1>

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Manuscripts in preparation

Guran, Völter, Szasz, Lamm & Huber: „Canine and human visual scanning patterns of social and non-social con- and heterospecific interactions”

Guran et al., “The neural substrates of canine social interaction perception: Evidence for a social processing network”

Guran & Bunzeck, “A theoretical framework of retrieval practice”

Lonardo, Guran, et al. (shared first author): “First and third person experience of touch in the dog brain”

Guran, Staes, et al.: “Understanding Evolution of Brains and Behaviors - Interdisciplinary approaches to the study of cognitive evolution”

Current projects and collaborations For an updated list, please visit <https://alexandrinaguran.github.io/projects/>

Dog’s perception of social interaction, Leading author in project, MRI-research. (Selection of collaborators: Prof. Claus Lamm, Prof. Ludwig Huber, Dr. Christoph Völter, Dr. Magdalena Boch, Lucrezia Lonardo)

The core project of my postdoctoral research revolves around the evolution of social cognition in humans and dogs. Within this project, I am running studies about social and non-social interaction perception, somatosensory perception, and observation of vicarious touch in others. Doing fMRI scanning with dogs is challenging, thus I have also worked on hardware improvements for the MRI scanning. For more information on our projects (and cute pictures of dogs in scanners), click the “CCNU” Tab at the top of this page.

Music for Autism “M4A” (Collaboration partners: Dr. Giorgia Silani, Dr. Christian Gold)

In this project, I was responsible for the design and implementation of the music prediction task, in which children are presented with consonant and dissonant stimuli and learn to associate them with certain images. Our aim is to investigate whether prediction forming is disturbed in ASD and whether musictherapy can have a beneficial effect on music-related and social predictions.

For more info, see my preprints or the project website at: <https://www.m4a-project.net/>

Human attitudes towards canines (Collaboration partners: Prof. Dr. Friederike Range, PI Dr. Sarah Marshall-Pescini, Dr. Gwen Wirobski, Wolf Science Center)

In this project, I am responsible for designing explicit and implicit measures of attitudes towards dogs, wolves, and free-ranging dogs. To this end, we developed a questionnaire measuring sociodemographic data and attitudes. Additionally, I designed an adaptation of an IAT (implicit association test) to measure response-time based implicit biases for different animals.

Other

- A comprehensive model of retrieval practice and its neural bases (with Prof. Nico Bunzeck, University of Lübeck)
- ManyDogs, big team science (see <https://manydogsproject.github.io/>)
- Connective Field Modeling in canines (with Dr. Nicholas Hedger, University of Reading)
- Somatosensory perception and temperament in domestic pigs (co-author, leads: Dr. Charlotte Goursoot, Dr. Oceane Schmitt, Dr. Jean-Loup Rault, Veterinary Medical University Vienna, and Dr. David Val-Laillet, INRAE, Université de Rennes and his team)
- Multimodal perception of musical chords in professional and lay musicians (with Prof. Lars Kuchinke, International Psychoanalytic University Berlin)

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Scholarships/Grants

2023/2024	Marie Jahoda-Scholarship of the University of Vienna (30.000€)
2022	ECR Travel Grant, Faculty of Psychology, University of Vienna
2021	Trainee Professional Development Award, Society for Neuroscience
2015/16	Stevenson Exchange Scholarship, University of Glasgow
2015/16	DAAD Graduate Scholarship for a Master's degree in the UK (15.000€)
2013 – 2016	Konrad-Adenauer-Stiftung student scholarship

Science outreach & management (selection)

2023 – present	Social Media volunteer for in:Mind Germany https://de.in-mind.org/blog
2019 – present	On-demand peer-reviewer for different journals
2018 – present	supervision of interns, graduate and undergraduate theses, and student mentoring
05/2023	“How the MRI scanner got pet dogs” (translated from German: “Wieder MRT Scanner auf den Hund kam”), Pint of Science Austria, presentation to lay audience
02/2021 – 08/2022	Co-Founder “Ask A Scientist” – organizing Q&A events for postgraduate students, inviting diverse panellists from around the globe (on hiatus)
09/2021 – 12/2021	Editor on a free of charge neuroscience textbook: “Open Neuroscience Initiative”, Chapter 13: Learning and Memory, see https://www.austinlim.com/open-neuroscience-initiative
2017 – 2020	volunteer work at “Viva Con Agua” (NGO), organizing fundraisers and donation collection
2013 – 2015	Elected member of the student council for psychology at the Ruhr University Bochum, on teaching quality improvement funding committee

Software and Programming

MATLAB	expert	programming and data analysis
SPM 12 (Toolbox)	expert	fMRI data preprocessing and analysis
JASP	expert	Bayesian data analysis
IBM SPSS Statistics	expert	data analysis
R	advanced	data analysis
Python (and PsychoPy)	advanced	programming and data analysis
EEGLAB & FieldTrip (Toolbox)	advanced	EEG data preprocessing and analysis
Adobe Premiere Pro	advanced	video & stimulus editing
Audacity	advanced	audio editing
Microsoft Visual Basic C++	basic	simple programming
Presentation	basic	programming of experimental paradigms
JavaScript	basic	web programming

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Invited Talks

November 2022	“Canine Social Cognition - Neuroimaging in dogs and humans” Aalto University Finland, PI Lauri Parkkonen
October 2022	“Comparative neuroimaging and canine (social) cognition” Medical University Vienna, High-Field MR Center
May 2021	“Ambiguous non-verbal false belief understanding: from dogs to children”, presented in the section of developmental psychology at the University of Vienna, invited by Prof. Dr. Stefanie Höhl
March 2021	“The retrieval practice effect in long-term memory in younger and older adults”, at the Faculty of Psychology at the Ruhr-Universität Bochum, Germany, invited by Prof. Dr. Nikolai Axmacher

Conferences (selection, poster presentations and short talks)

September 2023	Talk at “The Neurobiology of Social Cognition” Erice Workshop, Fondazione Ettore Majorana, Sicily
June 2023	“Psychologie und Gehirn” Tübingen, Symposium Chair “Comparative research in psychology and neuroscience” (plus talk)
July 2022	eSCAN European Society for Social, Cognitive and Affective Neuroscience, talk
January 2021	Society for Neuroscience Global Connectome 2021, digital poster
April 2019	Aging and Cognition, Zürich, Switzerland, poster
November 2018	Society for Neuroscience, Annual Meeting (San Diego, USA)
May 2018	Psychologie und Gehirn (Psychology and Brain), Gießen, Germany, short talk
March 2017	Spring School Bochum, short talk
August 2016	XXIII Biennial Congress on Human Ethology of the ISHE (International Society for Human Ethology) in Stirling, poster
March 2016	Mind, Brain and Body Symposium of the Berlin School of Mind and Brain, poster

Languages

English	Cambridge Certificate of Proficiency in English (Level C2)
German	native
Romanian	native
French	native
Latin	University entry level
Italian	Basics (A2)

Interests

Music: playing piano & guitar, reading & writing, Animal Welfare, cooking, baking & foodsharing.