CURRICULUM VITAE I Magdalena Boch

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Nationality: Austrian

CV last updated: October 2022

EDUCATION & PROFESSIONAL EXPERIENCE

since Oct 22 **Post-doctoral researcher I University of Vienna**
Faculty of Psychology, *Department for Cognition, Emotion, and Methods in Psychology*

Social Cognitive and Affective Neuroscience Unit of Prof. Claus Lamm
Domestication lab of Ass.-Prof. Friederike Range (University of Veterinary Medicine Vienna)

Project: *Do human attitudes towards wolves and dogs reflect the human-related temperament traits of the two species?*

► set up of novel visual perception paradigm and creation of stimulus set to study neural bases of how humans perceive dogs vs. wolves, and in comparison to other (threatening) species, project pre-registration currently in preparation

09/2022 **Dr. rer. nat. in *Psychology* I University of Vienna** (*with distinction / summa cum laude)*
Faculty of Psychology, *Department for Cognition, Emotion, and Methods in Psychology*
Faculty of Life Sciences, *Department of Behavioural and Cognitive Biology*

Supervisor: Prof. Claus Lamm, Co-supervisors: Prof. Ludwig Huber & Ass.-Prof. Isabella Wagner

Thesis: *How dogs and humans perceive and understand each other: a comparative neuroimaging approach*

► set up MRI scanning facilities for canine research, established BOLD signal properties for the canine brain, and showed novel evidence for convergent evolution of the neural bases of social cognition (agent & action perception) in dogs and humans applying uni- and multivariate neuroimaging analyses

2021-2022 **6-month research stay I University of Oxford**
University of Oxford, Wellcome *Centre for Integrative Neuroimaging*

Cognitive Neuroecology Lab of Assoc.-Prof. Rogier Mars

Project: *Comparing brain areas for social behaviour in humans and dogs: A case on convergent evolution?*

► established international collaboration with comparative MRI methods lab, established methods for analysis of canine resting state fMRI data, currently application of connectivity fingerprint analysis to test of social brain areas in dogs and humans

09/2017 **M.Sc. in *Psychology* I University of Vienna** (*with distinction / summa cum laude*)
Track: Social Neuroscience, Cognitive Psychology and Research Methods

Supervisor: Prof. Martin Voracek

Thesis: *The triangular relationship between TV viewing, perception of capital punishment and chance. An endorsed and reviewed preregistered replication and meta-analysis.*

► conducted direct and conceptual replication study and cumulative meta-analysis using state-of-the-art open science and reproducibility techniques and showed that wrong statements about capital punishment in Austria reflected poor study design of original study rather than actual beliefs of participants

2016 **Research & applied neuropsychology internship I *Vienna General Hospital, Vienna, Austria***
Department of Paediatrics and Adolescent Medicine

Paediatric Neuro-Oncology sub-unit lead by Dr. Thomas Pletschko

Summer internship
► performed literature research on effects of neuropsychological trainings and conducted clinical and neuropsychological diagnostics with preschool children diagnosed with neurofibromatosis type 2 and paediatric neurological cancer survivors

09/2015 **B.Sc. in *Psychology* I University of Vienna**

Supervisors: Dr. Marco Jirasko, Dr. Elisabeth Stefanek

Thesis 1: *The impact of two opposed learning strategies on the outcome of multiple choice vs. open-ended question format* **I** Thesis 2: *Homophobic bullying and victimization from the perspective of lesbian, gay and bisexual (LGB) adolescents*

► (1) conducted empirical study as part of a team of students and (2) an independent literature review

PUBLICATIONS (*equal author contributions)

ORCID: https://orcid.org/0000-0003-3627-5180
Google Scholar: https://scholar.google.com/citations?user=-3iMARMAAAAJ&hl=de&oi=ao
Github: https://github.com/magdalenaboch

Boch, M., Karl, S., Wagner, I.C., Huber, L.*, & Lamm, C.* (in prep). The neural correlates of action observation in dogs (Canis familiaris) and humans

2022 Guran, A. C.-N., Sladky, R., Karl, S., **Boch, M.**, Laistler, E., Windischberger, C., Huber, L., Lamm, C. (2022). Validation of a new coil array tailored for dog functional magnetic resonance imaging (fMRI) studies. *eNeuro*, doi: 10.1101/2022.06.14.496064

2021 **Boch, M.**, Wagner, I.C., Karl, S., Huber, L.*, & Lamm, C.* (2021). Similarities and differences of face and body perception in the dog (*Canis familiaris*) and human brain. *bioRxiv,* doi:10.1101/2021.08.17.456623. • revise and resubmit at *iScience*

Boch, M., Karl, S., Sladky, R., Huber, L., Lamm*, C. & Wagner*, I. C. (2021). Tailored haemodynamic response function increases detection power of fMRI in awake dogs (*Canis familiaris*). *Neuroimage*, doi:10.1016/j.neuroimage.2020.117414

Bukowski, H., Todorova, B., **Boch, M.,** Silani, G., & Lamm, C. (2021). Socio-cognitive training impacts emotional and perceptual self-salience but not self-other distinction. *Acta Psychologica.* doi:10.1016/j.actpsy.2021.103297

2020 Karl S, **Boch, M.,** Zamansky A, van der Linden D, Wagner IC, Völter CJ, Lamm* C, Huber* L (2020). Exploring the dog-human relationship by combining fMRI, eye-tracking and behavioural measures. *Scientific Reports,* doi:10.1038/s41598-020-79247-5

Bukowski, H., **Boch, M.,** Lamm, C., & Silani, G. (2020). Is Self-Other distinction malleable? Egocentric and altercentric biases in empathy are modulated by priming attachment style and similarity mindsets. *psyArXiv*. doi: 10.31234/osf.io/bpyvz

Karl, S., **Boch, M.**, Virány, Z., Lamm, C., & Huber L. (2020). Training pet dogs for eye-tracking and awake fMRI. *Behavior Research Methods*, 1-19. doi:10.3758/s13428-019-01281-7

2019 **Boch, M.,** Tran, U. S., & Voracek, M. (2019). Does really one in ten believe capital punishment exists in a contemporary European Community country? An endorsed, prereviewed, preregistered replication study and meta-analysis. *Frontiers in psychology,* 10, 1601. doi:10.3389/fpsyg.2019.01601

2017 **Boch, M.** & Lamm, C. (2017). The multiple facets of empathy. *Animal Sentience*, 14(14).

OSF I *Open data & Preregistrations*

2022 **Boch, M.,** Karl, S., Wagner, I., Huber, L., & Lamm, C. (2022). *The neural correlates of action observation in dogs (Canis familiaris) and humans*. Retrieved from osf.io

2021 **Boch, M.**, Wagner, I., Karl, S., Huber, L., & Lamm, C. (2021). *Similarities and differences of face and body perception in the dog (Canis familiaris) and human brain*. Retrieved from osf.io/kzcs2

2020 Karl, S., **Boch, M.,** Wagner, I., Lamm, C., & Huber, L. (2020). *Exploring the dog-human relationship using a multimethod approach: Combining fMRI, eye tracking and behavioral measures*. Retrieved from osf.io/kagy3

2017 **Boch, M.**, & Voracek, M. (2017). *Endorsed Pre-Registered Replication: Till et al. (2016)*. Retrieved from osf.io/9qagr

INVITED TALKS

07/2022 **Boch, M.**, Wagner, I.C., Karl. S., Huber, L., & Lamm, C. *Comparing brain areas for social cognition in dogs and humans: A case on convergent evolution?* Talk as part of the symposium "*Comparative insights into the development and evolution of the social brain*" co-organized by **Magdalena Boch** and Claus Lamm, European Society for Cognitive and Affective Neuroscience (ESCAN) Meeting, Vienna, Austria

07/2021 **Boch, M.**, Wagner, I.C., Karl. S., Huber, L., & Lamm, C. *Face, body and object representation in dog and human brain. Canine Science Forum*, virtual conference.

04/2021 **Boch, M.**, Wagner, I.C., Karl. S., Huber, L., & Lamm, C. *Face, body and object representation in the human and canine occipito-temporal cortex.* 28th International Conference on Comparative Cognition, virtual conference.

01/2021 **Boch, M.**, *How dogs and humans perceive and understand each other: A comparative neuroimaging approach.* Institutional talk at the Cognitive Neuroecology Lab, University of Oxford, Oxford, United Kingdom (virtual)

04/2018 **Boch M**., Tran, U.S. & Voracek, M. *A State-of the-Art Replication Study: Close, conceptually extended, endorsed, preregistered, pre-reviewed*. Austrian Association of Psychological Science (ÖGP) annual meeting 2018, University of Linz, Austria.

CONFERENCE POSTERS (selection)

2022 **Boch, M.,** Karl. S., Wagner, I. C., Huber*, L., & Lamm*, *Neural correlates of action observation in dogs (Canis familiaris) and humans.* 7th Computational Properties Prefrontal Cortex 2022, Oxford, United Kingdom.

2021 **Boch, M.**, Wagner, I.C., Karl. S., Huber*, L., & Lamm*, C. *Face, body and object representations in the dog and human brain*. *43rd Annual Meeting of the Cognitive Science Society*, virtual conference.

Boch, M., Wagner, I.C., Karl. S., Huber, L., & Lamm, C. *Face, body and object representation in canine temporal and occipital cortices*. *ESCAN*, virtual conference.

Boch, M., Wagner, I.C., Karl. S., Huber*, L., & Lamm*, C. *Face, body and object representation in the human and canine occipito-temporal cortex*, SfN Global Connectome, virtual conference.

2020 Karl, S., **Boch, M.,** Lamm, C. & Huber. *Exploring the dog-human relationship: Combining fMRI and eye-tracking in attentive dogs*. 70 Years of Attachment Research: A Multidisciplinary Social Neuroscience Perspective, University of Essex, United Kingdom (*held online*)

2019 Karl, S., **Boch, M.,** Lamm, C. & Huber. *Who do you prefer? Investigating the human-dog attachment system in pet dogs*, 6th European Student Conference on Behaviour & Cognition, 2019, Padua, Italy.

Boch, M., Karl, S., Wagner, I. C., Windischberger, C., Huber L. & Lamm, C. *A rewarding human smile? Neural correlates of canine emotion perception*, OHBM Annual Meeting 2019, Rome, Italy.

Boch, M., Karl, S., Wagner, I. C., Huber L. & Lamm, C. *A rewarding Human Smile: An fMRI study investigating canine emotion perception*. Canine Science Forum, 2018, Budapest, Hungary.

Karl, S., **Boch, M.,** Lamm, C. & Huber L. *Training pet dogs to use functional magnetic resonance imaging (fMRI)*. Canine Science Forum, 2018, Budapest, Hungary.

Boch, M., Karl, S., Huber L. & Lamm, C. *How dogs and humans perceive and understand each other: A canine neuroimaging approach.* Annual Poster Session, Faculty of Psychology, University of Vienna, 2018, Austria. • **Awarded best poster**

ACADEMIC SCHOLARSHIPS & AWARDS

2019-2022 Travel grants, Jungwissenschaftler-Fond, University of Vienna, Austria (> 1500€)

2021 Marietta Blau Scholarship, OeAD – Austria's Agency for Education and Internationalisation, Austria (9.480€)

2018 Best Poster Award: Young Scientists Poster Session, Faculty of Psychology, Vienna Austria

Scholarship for excellent academic achievements, University of Vienna, Vienna, Austria (751€)

2017 Scholarship for excellent academic achievements, University of Vienna, Vienna, Austria (750€)

TEACHING & SUPERVISION

2019-ongoing Supervision of 2 master students: one student ongoing; other student graduation in fall 2020 (with distinction, now pursuing a PhD), thesis title: "*Emotion processing and lateralization in the canine brain*"

2017-2022 Supervision of > 20 interns; supervision and training of 3 research assistants to help acquire MRI data from awake and unrestrained dogs and from human participants

2019, 2020 Teaching assistant, course name: "Theorie & Empirie wissenschaftlichen Arbeitens" (winter terms)

Topic: A course on theoretical background and practical steps necessary to perform and interpret functional magnetic resonance imaging (fMRI) data analysis. Main task: practical sessions, and conceptual sessions focusing on comparative (imaging) research in humans and non-human animals, and open science.

AD-HOC REVIEWER

Journal of Comparative Neurology, Neuroimage

DOCTORAL SCHOOLS & PROGRAMS

2017-2022 Vienna Doctoral school CoBeNe (Cognition, Behaviour, Neuroscience), **Behavioral & Cognitive Biology** program. Speaker: Prof. Thomas Bugnyar, University of Vienna, Vienna, Austria

Doctoral program (DK) "**Cognition and Communication 2**" (Chair: W. Tecumseh Fitch), University of Vienna and University of Veterinary Medicine, Vienna, Austria

WORKSHOPS & SUMMER/WINTER SCHOOLS

10/2021 Three-day **grant writing retreat and workshop**, online.
Organiser: Doctoral college Cognition & Communication 2, Writing Coach: Dr Iain Patten.

02/2021 Winter School: **MRInference: From data to knowledge**, University of Padua, Italy (virtual).
Organisers: Assoc. Prof. Livio Finos, Dr. Paolo Girardi

09/2020 **Pattern Recognition in Neuroimaging (PRNI) Virtual Summer School**, Vienna, Austria.
Organiser: Prof. Moritz Grosse-Wentrup

01/2020 Five-day **writing retreat and scientific writing workshop,** Baden, Austria.
Organiser: Doctoral college Cognition & Communication 2, Writing Coach: Dr Iain Patten.

09/2018 Summer School: **The Visceral Mind**. Bangor, United Kingdom.
Organisers: Drs Turnbull, Watson, Muhlert, Thiebaut de Schotten, Bracewell & Thierry.

09/2017 Four-day **SPM 12** and **Matlab course** (Fall 2017), Institute for Systems Neuroscience, UKE Hamburg, Germany.
Lectures and practical fMRI analysis training in univariate, multivariate and resting state analysis.

ORGANIZATION, INVOLVEMENT & SCIENTIFIC OUTREACH

2022 Co-lead in creation of a **lab handbook** describing the SCAN Unit's ethos, expectations, and best practices as well as administrative information to facilitate the start of new members joining the lab.

2022 **Inside the dog brain with Guide Dogs UK**, a public engagement event organized by the **Centre for the Creative Brain, University of Oxford** – talk about my research for the general public addressing the questions *why* dogs are an exciting model species for comparative social neuroscience, *how* the dogs brain looks like and *how* we

collect the dog neuroimaing data, and *what* we have learned so far about the evolution of the dog and human brain and the dog-human relationship from my research and from other labs around the world

2022 Referee for **In-mind magazine** (popular science) to evaluate teaser submissions for a children's issue on research topics in psychology

2022 **Pint of Science Austria** – talk about my research for the general public addressing the questions *why* I do comparative research, *how* we train the dogs for functional MRI and *what* I have learned so far from my research

2020-2022 **"Kinderuni"** (engl. children's university): half-day workshop for children aged 7-9 years old with a focus on social cognition (rubber hand illusion, playing games to train perspective taking and empathy) and the brain in general (making brain helmets, matching brains and animals quiz)

2021 Co-organization of a **2-day workshop** surrounding the topic "***How to become a Post-doc***" targeted at PhD candidates in their final year – tasks ranged from project ideas and conceptualization to organization of speakers (principal investigators and post-docs) and attendees and moderation of the workshop.

2018-2022 Administration of the **Comparative Canine Neuroimaging Unit (CCNU) Website** with updates on current projects, publications, and facilities (ccnu.univie.ac.at)

2018, 2020* **"Lange Nacht der Forschung"** (engl. Long night of research): Information booth on psychological research in the psychology department (e.g. "How do we measure affective touch? How do dogs stay motionless during MRI data acquisition and why do we study dogs?), paired with quizzes (e.g. facts about the brain) and actual data collection (emotion discrimination task) **postponed to 2021 due to COVID-19*

2018 Photo Competition **"My Research in one Picture"**, University of Vienna, Austria. • **Top 10 finalist**

2017-2018 Co-Coordinator and **Host of the Journal club** at the Social Cognitive and Affective Neuroimaging Unit

SKILLS & CERTIFICATIONS

Data acquisition

- Extensive training and certification for Siemens Magnetom Skyra MR system
- Co-development of functional MRI data acquisition protocol for fully awake and unrestrained dogs (*Canis familiaris)*
- Experimental control using Psychopy (Python) and Cogent (Matlab)
- Eye-tracking with Eyelink 1000 Plus, SR Research, Ontario, Canada
- Facial EMG (conduction & analysis of a small study within a research internship)

Data analysis I Coding

- Excellent Matlab skills including toolboxes such as SPM:
  univariate, psycho-physiological interaction, representational similarity analysis
- Neuroimaging analysis using FSL and bash scripting
- Development of preprocessing and analysis pipeline for dog MRI data
- Python including toolboxes such as nilearn (data visualization) and nipype (human MRI data analysis)
- R (multivariate statistics, data visualization)
- ITK-snap (manual segmentation and labelling)
- State-of-the-art open science methods such as pre-registration, safeguard power analysis, small telescopes approach and (better) *p*-curve
- Other software: SPSS (multivariate statistics), Psychometrics (Mokken scale analysis), Photoshop, TYPO3 (Content Management System)

Languages

- German (native)
- English (proficient)
- French (A-levels)