### CURRICULUM VITAE I Dr. Magdalena Boch

**Website:** [www.magdalenaboch.com](http://magdalenaboch.com/) **E-mail**: [magdalena.boch@ndcn.ox.ac.uk](mailto:magdalena.boch@ndcn.ox.ac.uk) **Bluesky:** [magdalenaboch](https://bsky.app/profile/magdalenaboch.bsky.social) **Nationality:** Austrian

**Key research terms**: non-invasive comparative neuroscience, evolution of social cognition and behaviour, human-animal relationship, methods for comparative neuroimaging, open and collaborative science

CV last updated: January 2025

**Academic degrees**

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| 2022 | **Dr. rer. nat. in *Psychology*** I graded with honours  University of Vienna, Austria; Date of defence: 30 September 2022  Thesis: “*How dogs and humans perceive and understand each other: a comparative neuroimaging approach*”  Supervisor: Prof. Claus Lamm, Co-supervisors: Prof. Ludwig Huber, Ass.-Prof. Isabella C. Anderson-Wagner |
| 2017 | **M.Sc. in *Psychology*** I graded with honours  University of Vienna, Austria; supervised by Prof. Martin Voracek |
| 2015 | **B.Sc. in** ***Psychology***  University of Vienna, Austria; supervised by Dr. Marco Jirasko, Dr. Elisabeth Stefanek |

### Professional experience

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| --- | --- |
| 02/25-01/27 | **Senior postdoctoral research fellow** I Erwin Schrödinger fellowship, University of Oxford  Wellcome Centre for Integrative Neuroimaging (WIN), Centre for Functional MRI of the Brain (FMRIB), Nuffield Department of Clinical Neurosciences  Research group: Cognitive Neuroecology lab, led by Prof. Rogier Mars  ➥ *investigation of the evolution, structure and function of the carnivoran and primate social temporal lobe by combining structural, diffusion, and resting-state measures in a large range of carnivoran species; contribution to the development of novel techniques to quantitatively compare brain organization across diverse species* |
| 09/24 - 01/25 | **Senior research fellow / early career principal investigator** IL’Oréal & UNESCO for Women in Science fellowship & award; University of Oxford (50%), University of Vienna (50%)  WIN, FMRIB Centre, Nuffield Department of Clinical Neurosciences; Research group: *Cognitive Neuroecology lab,* led by Prof. Rogier Mars  Faculty of Psychology, Department for Cognition, Emotion, and Methods in Psychology; Research group: Social, Cognitive, and Affective Neuroscience (SCAN) Unit, led by Prof. Claus Lamm  ➥ *development of analysis models to improve detection power for dog neuroimaging by characterizing the BOLD signal time course across the whole brain; establishment of first audio-visual neuroimaging protocols with domestic dogs; development of first fully automated preprocessing pipeline for canine neuroimaging implemented with FSL and the MR Comparative Anatomy Toolbox (github.com/neuroecology/MrCat) available in python and bash code* |
| 10/22-08/24 | **Postdoctoral researcher** I University of Vienna - interdisciplinary cooperation with the University of Veterinary Medicine, Vienna, Austria  Faculty of Psychology, Department for Cognition, Emotion, and Methods in Psychology; Research group: Social, Cognitive, and Affective Neuroscience (SCAN) Unit, led by Prof. Claus Lamm  Cooperation partner: Konrad Lorenz Institute of Ethology; research group: Domestication lab, led by Friederike Range  ➥ *combining neuroimaging, fear conditioning paradigms, self-report and behavioural measures to investigate human attitudes toward wolves. This research challenges the assumption that innate mechanisms exclusively drive fear of wolves and offers innovative pathways for enhancing coexistence strategies between humans and wildlife* |
| 10/22-08/24 | **Research fellow** I University of Oxford, UK  WIN, FMRIB Centre, Nuffield Department of Clinical Neurosciences; Research group: *Cognitive Neuroecology lab,* led by Prof. Rogier Mars  ➥ *establishment of a common framework of comparison across carnivoran brains based on neocortical sulcal anatomy,* detailed characterization of sulcal patterns in previously unexamined species. *contributed to the development of precon\_all (github.com/ neurabenn/precon\_all), designed to create brain surfaces of non-human animal models* |
| 09/21-09/22 | **Predoctoral research fellow** I University of Oxford, UK  WIN, FMRIB Centre, Nuffield Department of Clinical Neurosciences; Research group: *Cognitive Neuroecology lab,* led by Prof. Rogier Mars  ➥ *establishment of long-term international collaboration, development of methods for analysis of canine resting state fMRI data to compare connectivity profiles of social brain areas in dogs and humans* |
| 01/19-06/19 | **Predoctoral research fellow** ICentral European University, Budapest, Hungary  Social Mind Center; Research group: *Social Mind and Body group,* led by Prof. Natalie Sebanz  ➥ *training and support in developing paradigms to investigate action and social interaction perception in humans and non-human animals* |
| 09/17-09/21 | **Predoctoral researcher** IUniversity of Vienna, Austria  Faculty of Life Sciences, Department of Cognitive Biology; Faculty of Psychology, Department for Cognition, Emotion, and Methods in Psychology; Research group: SCAN Unit, led by Prof. Claus Lamm  ➥ *essential part of the team setting up MRI scanning facilities for canine research, established BOLD signal properties for the canine brain, showed novel evidence for convergent evolution of the neural bases of social cognition (agent & action perception) in dogs and humans, and the neural mechanism underpinning the close bond and attachment between the two species, conducting uni-, multivariate and task-based connectivity neuroimaging analyses, and systematic reviews* |
| 09/16-09/17 | **Undergraduate researcher** IUniversity of Vienna, Austria  Faculty of Psychology, Department for Cognition, Emotion, and Methods in Psychology; Research group: *Psychological Research Methods - Research Synthesis Unit,* led by Prof. Martin Voracek  ➥ *conducted replication study & cumulative meta-analysis using state-of-the-art open science and reproducibility techniques showing that wrong statements about capital punishment in Austria reflected poor study design of original study, not true beliefs* |

**Publications** \*equal contributions

**ORCID**: [orcid.org/0000-0003-3­­627-5180](https://orcid.org/0000-0003-3627-5180), **Google Scholar:** [googlescholar/magdalenaboch](https://scholar.google.com/citations?user=-3iMARMAAAAJ&hl=de&oi=ao), **Github:** [github.com/magdalenaboch](https://github.com/magdalenaboch)

in prep **Boch, M.**, Marshall-Pescini, S., Sladky, R., Range, F., & Lamm, C. Good dog, bad wolf: Debunking evolutionary preparedness to fear wolves • [OSF project site incl. extended abstract](https://osf.io/v6ajq/?view_only=bccbd49957754850a631c391418a5f0e)

Borghi, O. & **Boch, M.** *Modulation of the human action observation network: Investigating action, agent, and observer factors* • [Github repository](https://github.com/olafborghi/AON_ACTION)

2024 **Boch, M.**, Karl, S., Wagner, I.C., Lengersdorff, L.L., Huber, L.\*, & Lamm, C.\* (2024). Action observation reveals a network with divergent temporal and parietal cortex engagement in dogs compared to humans. *Imaging Neuroscience*, doi:10.1162/imag\_a\_00385 • [OSF repository](https://osf.io/z479k/)

**Boch, M.,** Karadachka,K., Loh, K. K., Benn, R.A., Roumazeilles, L.,Bertelsen, M.F., Manger, P.F., Wriggelsworth, E., Spiro, S.,Spocter, M. A., Johnson, P.J., Souza, K., Patzke, N., Lamm, C., Sallet, J., Khrapitchev, A. A., Tendler, B.C., Mars, B. (2024). Comparative neuroimaging of the Carnivoran brain: Neocortical sulcal anatomy, reviewed preprint *eLife*, doi:10.7554/eLife.100851.1.sa3• [WIN digital brain zoo data](https://open.win.ox.ac.uk/DigitalBrainBank/#/)

**Boch, M.**, Huber, L., & Lamm, C. Domestic dogs as a comparative model for social neuroscience: Advances and challenges. *Neurosci Biobehav Rev*, https://doi.org/10.1016/j.neubiorev.2024.105700

Guran, C.-N., **Boch, M.**, Lonardo, L., Karl, S., Sladky, R., Huber\* L., & Lamm\*, C (2023). Functional mapping of the dog somatosensory cortex using noninvasive fMRI and in vivo touch. *Brain Struct Funct*, https://doi.org/10.1007/s00429-024-02798-0 • [preregistration](https://osf.io/tdzrf)

2023 **Boch, M.**, Wagner, I.C., Karl, S., Huber, L.\*, & Lamm, C.\* (2023). Functionally analogous body- and animacy-responsive areas are present in the dog (*Canis familiaris*) and human occipito-temporal lobe. *Communications Biology,* doi:10.1038/s42003-023-05014-7. • [OSF repository](https://doi.org/10.17605/OSF.IO/KZCS2)

Guran, A. C.-N., 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*, doi: 10.1523/ENEURO.0083-22.2022

2021 **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 • code & data available in [supplementary information](https://www.sciencedirect.com/science/article/pii/S1053811920308995#sec0028)

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 • [OSF repository](https://osf.io/kagy3/)

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 • [OSF project site](https://osf.io/9qagr/)

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

**Conference proceedings, presentations, and invited talks**

06/2025 **Boch M.**, Social expectation formation: shared neural mechanisms and evolutionary foundations across domestic dogs, humans, and primates”. European Social Club 2025 Meeting, Coimbra, Portugal

05/2025 **Boch M.**, How do dogs and humans perceive and navigate their complex social environment? Insights from comparative neuroimaging. Colloquium talk at Centre for the Advanced Study of Collective Behaviour (CASCB), University of Konstanz and Max Planck Institute of Animal Behavior, Konstanz, Germany

05/2024 **Boch M.**, The neural bases of social cognition in dogs and humans: a case of convergent evolution? Colloquium talk at Institute des Sciences Cognitives (ISC) Marc Jeannerod, Lyon, France

11/2023 **Boch, M**. *From canines to primates: Evolution of the temporal lobe and its role for complex social abilities.* Talk as part of the symposium “Understanding Empathy and Social Signal Recognition: Insights from Animal and Human Research”. Society for Social Neuroscience (S4SN), virtual meeting.

09/2023 **Boch, M.** *Converging minds? Investigating social cognition in domestic dogs and humans*. Invited talk at Comparative Brain Meeting, Paris, France.

07/2023 **Boch, M.,** Wagner, I.C., Karl. S., Huber, L., & Lamm, C. *Mutual understanding: How dogs and humans perceive each other’s actions and the differential engagement of the parietal and temporal cortex.* Canine Science Forum, Budapest, Hungary.

11/2022 **Boch,** **M.**\*& Guran, A. C.-N.\* *From methodological innovations to the evolution of social cognition and the dog-human attachment bond: Insights from comparative neuroimaging with domestic dogs and humans.* Institutional talk atLauri Parkkonen Lab, Aalto University, Eespo, Finnland. • online

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

04/2021 **Boch,** **M.**, Wagner, I.C., Karl. S., Huber, L., & Lamm, C. *Representing social worlds and relationships: Face, body and object representations in the human and dog brain.* 28th International Conference on Comparative Cognition, Co3 • online

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

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)

2024 **Boch, M.**, Völter, C., Mars, R.B., Huber\*, L. & Lamm\*, C. *Social expectation formation in the dog temporal lobe*. Salzburg Mind Brain Annual Meeting (SAMBA), Salzburg, Austria. • **Awarded best poster**

**Boch, M.**, Völter, C., Mars, R.B., Huber\*, L. & Lamm\*, C. *The neural bases of how dogs and humans navigate their social environment.* Society for Social Neuroscience (S4SN) conference, Tsukuba, Japan.

Guran, C.N.-A., **Boch, M.**, Völter, C , Huber\*, L. & Lamm\*, C. *How do dogs (and their brains) process social interactions?* Federation of European Neuroscience Societies (FENS) Forum, Vienna, Austria.

Mynssen, H., **Boch, M.,** Patzke, N., Mars, R., Mota, B., & Avelino-de-Souza, K. *Stitching cortices: reconstruction method for lesser-known animals*. Federation of European Neuroscience Societies (FENS) Forum, Vienna, Austria

**Boch, M.**, Völter, C., Mars, R.B., Huber\*, L. & Lamm\*, C. *The neural bases of how dogs and humans navigate their social environment*. Federation of European Neuroscience Societies (FENS) Forum, Vienna, Austria.

2023 **Boch, M.**, Range, F., Marshall-Pescini, S., & Lamm, C. *Human implicit and explicit emotional responses towards wolves and dogs*. Canine Science Forum, Budapest, Hungary.

2022 **Boch, M**., Karl. S., Wagner, I. C., Huber\*, L., & Lamm\*, C. *Neural correlates of action observation in dogs (Canis familiaris) and humans.* 7th Computational Properties Prefrontal Cortex 2022, Oxford, United Kingdom • [poster](https://magdalenaboch.com/uploads/poster_CPPC_2022.pdf)

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* • online

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

**Boch, M**., Wagner, I.C., Karl. S., Huber\*, L., & Lamm\*, C. *Face, body and object representation in the human and canine occipito-temporal cortex*, Society for Social Neuroscience (SfN) Global Connectome • online

**Boch, M.,** Wagner, I.C., Karl. S., Huber\*, L., & Lamm\*, C. *Face, body and object representation in the human and canine occipito-temporal cortex*, Canine Science Forum (CSF)• online

2020 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.

### 2019 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.

2018 **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, Austria. • Awarded best poster

**Academic scholarships & awards**

2024 **Erwin Schrödinger postdoctoral fellowship**, Austrian Science Fund, project “Evolution of the canine and primate social temporal lobe” (217.950 €)

**L’ORÉAL / Austrian Academy of Sciences / UNESCO fellowship for Women in Science**, project “Setting a new analysis standard for canine comparative social neuroscience“ (25.000€)

**Support grant** **“international communication”** of the Austrian Research Community (Österreichische Forschungsgemeinschaft, ÖFG); supporting participation at Society for Social Neuroscience (S4SN) conference in Tsukuba, Japan (700€)

**Best Poster Award**, Austria Salzburg Mind-Brain Annual Meeting (SAMBA), Salzburg, Austria

2023 **Support Grant**, Faculty of Psychology, University of Vienna, Austria; supporting the grant application of the project “Evolution of the canine and primate social temporal lobe” (1000€)

2022 **PostDoc Award**, Faculty of Psychology, University of Vienna, Austria (4700€)

2021 **Marietta Blau Scholarship**, Austria’s Agency for Education and Internationalisation, Austria (9.480€)

2019-2023 **Travel grants**, Early Career Researchers-Fond, University of Vienna, Austria (> 1700€)

2017-2022 **Scholarships for excellent academic achievements**, University of Vienna, Vienna, Austria (3000€)

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

**Teaching & Supervision**

since 2020 **Co-supervision of 4 master students**: two graduated with honours & now pursuing a PhD, and two ongoing

2017-2022 **Supervision of > 30 interns; supervision and training of 3 research assistants** in the acquisition of MRI data from awake and unrestrained dogs and human participants

since 2019 **Guest teaching** at undergraduate seminars about comparative and open neuroscience and introduction to academia (e.g., workshops/lectures on grant writing)

2019-2022 **Teaching assistant**, seminar: “Theorie & Empirie wissenschaftlichen Arbeitens“ (winter terms); intro to conceptual background & practical steps necessary to perform and interpret fMRI data analysis – lead practical preprocessing & analysis sessions and conceptual sessions focusing on comparative research in humans and non-human animals, open science

**Ad-hoc reviewer** – Journal of Comparative Neurology, Neuroimage, Brain Structure and Function, Animal Cognition, eLife

**Organization, involvement & scientific outreach** (selection)

2024 **MIT technology review** (print only) - *The dog whisperer*(Die Hundeversteherin), portrait about my research as part of the L’ORÉAL-Unesco “For Women in Science” award

**KURIER am Sonntag** - **a popular Austrian weekly newspaper** (print & online) - *On the trail of evolution*(Der Evolution auf der Spur) feature about my research as part of the L’ORÉAL-Unesco “For Women in Science” award. Retrieved from: https://kurier.at/wien-wills-wissen/der-evolution-auf-der-spur/402986770

“**Are animals empathic?”** (Sind Tiere empathisch?) – Guest article in german popular science magazine

2023 **Does my dog understand me?** (Versteht mich mein Hund?)– **two-part SciComm segment on Austrian kids TV** (“Hallo OKIDOKI”) TV segment about awake dog neuroimaging research in Vienna together with Claus Lamm and 10-year-old Theo

2023 **Multilingual OHBM Kids Live Review** – talk at a German school about our research at the Cognitive Neuroecology lab (University of Oxford) together with other lab members

2022 Co-lead in creating a SCAN Unit **lab handbook** to facilitate the start of new members.

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

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 • [talk recording](https://www.youtube.com/watch?v=CHwqsHzSwD8&t=269s&ab_channel=PintofScienceAustria)

2020-2022 **“Kinderuni”** (engl. children’s university): half-day workshop for children (7-9 years) with a focus on social cognition (e.g., games to train perspective taking) & the brain (e.g., brain helmets, animals quiz) in 2020-2022

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 with international PIs and postdoctoral fellows

2018 **“Lange Nacht der Forschung“** (engl. Long night of research):Information booth on psychological research with quizzes (e.g., facts about the brain) and actual data collection (emotion discrimination task)

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

**Skills & Certifications**

**Data acquisition**

* Extensive training and **certification for Siemens Magnetom Skyra MR system**
* Experimental control using Psychopy (**Python**) and Psychtoolbox or Cogent (**Matlab**)
* **Eye-tracking** with Eyelink 1000 Plus, SR Research, Ontario, Canada

**Data analysis & coding**

* Excellent **Matlab** skills including toolboxes such as **SPM**:  
  univariate, psycho-physiological interaction, representational similarity analysis
* Neuroimaging analysis using **FSL** and **bash / python**
* **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: SPSS (multivariate statistics), Adobe Illustrator, Photoshop & Premiere Pro, TYPO3 (CMS)

**Languages** – German (native), English (proficient), French (A-levels)