

Department of Psychology
Justus Liebig University Giessen
Otto-Behaghel-Str. 10F
35394, Giessen, Germany

lenny.vandyck@gmail.com
levandyck.github.io
Twitter: @levandyck

Leonard E. van Dyck

Academic Education

PhD in Psychology (Computational Cognitive Neuroscience)

Justus Liebig University Giessen

- Supervision: Dr. Katharina Dobs and Prof. Martin Hebart

Giessen, Germany
09/2023 - today

MSc in Psychology (Cognitive Neuroscience)

University of Salzburg

- Grade: 1.06 (with Distinction)
- Thesis: "Unraveling top-down and bottom-up processes in theory of mind with layer fMRI"
- Supervision: Prof. Mario Braun and Prof. Martin Kronbichler

Salzburg, Austria
10/2020 - 02/2023

BSc in Psychology

University of Salzburg

- Grade: 1.73
- Thesis: "Seeing eye-to-eye? A comparison of object recognition performance in humans and deep convolutional neural networks under image manipulation"
- Supervision: Dr. Walter Gruber

Salzburg, Austria
10/2017 - 07/2020

Work Experience

Guest Researcher

Max Planck Institute for Human Cognitive and Brain Sciences

- Group Leader: Prof. Martin Hebart

Leipzig, Germany
10/2023 - today

Laboratory Manager (Method Unit EEG)

Centre for Cognitive Neuroscience, University of Salzburg

- Group Leaders: Prof. Manuel Schabus and Prof. Kerstin Hödlmoser

Salzburg, Austria
10/2020 - 02/2023

Teaching Assistant

Department of Psychology, University of Salzburg

- Course: Bachelor's Seminar "Artificial Intelligence"

Salzburg, Austria
03/2022 - 07/2022
03/2021 - 07/2021

Research Assistant

*Laboratory for Sleep, Cognition, and Consciousness Research,
University of Salzburg*

- Group Leader: Prof. Kerstin Hödlmoser

Salzburg, Austria
03/2020 - 07/2020

Research Internship

Department of Psychology, University of Salzburg

- Supervision: Prof. Katherine Hertlein (University of Nevada, Las Vegas)

Salzburg, Austria
04/2019 - 07/2019

Grants and Awards

Doctoral Scholarship German Academic Scholarship Foundation (Studienstiftung des deutschen Volkes e.V.)	2023
Merit Scholarship University of Salzburg	2023
ECVP22 Travel Grant Donders Institute for Brain, Cognition, and Behaviour	2022
Biology Future Prize Stiftung Natur, Mensch, Kultur	2016

Scientific Contributions

Google Scholar: <https://scholar.google.com/citations?user=5neRr6EAAAAJ>

ORCID: <https://orcid.org/0000-0002-6006-8539>

[OA] Open Access

Peer-Reviewed Manuscripts

5. **van Dyck, L. E.**, Bremmer, F., & Dobs, K. (2024). Artificial intelligence meets body sense: task-driven neural networks reveal computational principles of the proprioceptive pathway. *Signal Transduction and Targeted Therapy*, 9(1), 171.
<https://doi.org/10.1038/s41392-024-01870-9> [OA]
4. **van Dyck, L. E.** & Gruber, W. R. (2022). Modeling biological face recognition with deep convolutional neural networks. *Journal of Cognitive Neuroscience*, 35(10), 1521–1537.
https://doi.org/10.1162/jocn_a_02040 [OA]
3. **van Dyck, L. E.**, Denzler, S. J., & Gruber, W. R. (2022). Guiding visual attention in deep convolutional neural networks based on human eye movements. *Frontiers in Neuroscience*, 16.
<https://doi.org/10.3389/fnins.2022.975639> [OA]
2. **van Dyck, L. E.**, Kwitt, R., Denzler, S. J., & Gruber, W. R. (2021). Comparing object recognition in humans and deep convolutional neural networks – An eye tracking study. *Frontiers in Neuroscience*, 15.
<https://doi.org/10.3389/fnins.2021.750639> [OA]
1. Hertlein, K. M. & **van Dyck, L. E.** (2020). Predicting engagement in electronic surveillance in romantic relationships. *Cyberpsychology, Behavior, and Social Networking*, 23(9), 604-610.
<https://doi.org/10.1089/cyber.2019.0424>

Conference Proceedings

*equal contribution; presenter

5. **van Dyck, L. E.**, Hebart, M. N.*, & Dobs., K.* (2024). Core neural dimensions of functionally selective areas in the human visual cortex. **Poster** to present at *Cognitive Computational Neuroscience (CCN)*, August 6-9, Boston, MA, USA.
https://2024.ccneuro.org/pdf/124_Paper_authored_ManuscriptAuthored.pdf
4. **van Dyck, L. E.**, Hebart, M. N.*, & Dobs., K.* (2024). Neural representational dimensions capture the nested functional organization of the human visual cortex. **Talk** presented at *SFB Workshop Categorization in Perception and Action: Minds, Models, Mechanisms*, June 30 - July 2, Marburg, Germany.

3. **van Dyck, L. E.**, Dobs., K.* & Hebart, M. N.* (2024). Core neural dimensions of functionally selective areas in the human visual cortex. **Poster** presented at *Workshop on CONCEPTS, ACTIONS, and OBJECTS (CAOs)*, May 9-11, Rovereto, Italy.
2. **van Dyck, L. E.**, Denzler, S. J., & Gruber, W. R. (2022). Analyzing and increasing the similarity of humans and deep convolutional neural networks in object recognition. **Poster** presented at *European Conference on Visual Perception (ECPV)*, August 28 - September 1, Nijmegen, The Netherlands.
1. **van Dyck, L. E.**, Denzler, S. J., Schöllkopf, C. P., & Gruber, W. R. (2022). Spatial similarities between human eye movements and deep convolutional neural network saliency maps across time. **Poster** presented at *Salzburg Mind Brain Annual Meeting (SAMBA)*, July 14-15, Salzburg, Austria.

Theses

- van Dyck, L. E.** (2023). *Unraveling top-down and bottom-up processes in theory of mind with layer fMRI*. [Master's Thesis].
<https://eplus.uni-salzburg.at/obvusbhs/content/titleinfo/8960559> [OA]
- van Dyck, L. E.** & Gruber, W. R. (2020). *Seeing Eye-to-Eye? A comparison of object recognition performance in humans and deep convolutional neural networks under image manipulation*. arXiv [Bachelor's Thesis].
<https://doi.org/10.48550/arxiv.2007.06294> [OA]

Invited Talks

Vision and Computational Cognition Group (PI: Prof. Martin Hebart), Max Planck Institute for Human Cognitive and Brain Sciences, September 29, 2022
Two Approaches to Increasing the Human-Likeness of Visual Attention in DCNNs

Science Communication

- van Dyck, L. E.** & Dobs, K. (2023). Modellierung der biologischen Gesichtswahrnehmung mit Künstlicher Intelligenz. *DER AUGENSPIEGEL* (German Journal for Ophthalmologists), December 2023, 50-53.

Ad-hoc Reviewing

- The Journal of Neuroscience, Frontiers in Neuroscience, Conference on Cognitive Computational Neuroscience

Skills

- Programming: Python (Scikit-learn, PyCortex, PyTorch, PsychoPy), MATLAB, R, Bash, Git
- Data Acquisition: EEG, fMRI, Eye Tracking, Behavior
- Data Analysis: M/EEG, fMRI, Eye Tracking, Behavior, Deep Learning
- Languages: German (Native), English (C1/C2), French (B1)