

Sophie Slaats MA/MSc
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I am a junior researcher with a great interest in the tension between ‘abstract’ and ‘distributional’ representations in language specifically, and human cognition generally. Currently at the Max Planck Institute for Psycholinguistics as a PhD candidate, my aim is to contribute to our understanding of the neural processing, acquisition, and representation of hierarchical linguistic structure as a consequence of probabilistic processing.

My research focuses on the neural readouts of syntactic structure building. In my work I use encoding models of neural timeseries data (temporal response functions), reaction time experiments, and computational modeling. My key finding is that neural responses to both syntactic and lexical aspects of language are affected in time by their probabilistic or structural context.

Education

- September 2019 – present **PhD – MPI for Psycholinguistics, NL**
Expected defense: May 2024
Thesis: *Interactions between lexical probability and abstract syntactic structure in the brain and behavior*
- September 2018 – June 2019 **MSc Cognitive Neuroscience of Language – BCBL, ES ***
Thesis: *An fMRI examination of Verbal Fluency in Basque: Neural effects of training and difficulty on three types of guided lexical retrieval* (grade: 9.5/10)
- September 2016 – August 2018 **MA Linguistics – Utrecht University, NL ***
Specialization: psycholinguistics
Thesis: *Concrete ideas on abstraction: Distinct ERP-effects for abstract rules and concrete items in artificial grammar learning under distraction* (grade: 8.5/10)
Details: internship – University of Reading, UK
- September 2013 – July 2016 **BA Linguistics & Phonetics – Utrecht University, NL ***
Specialization: theoretical linguistics (semantics); psycholinguistics
Thesis: *Vectors or Relations? Tegenover as a problem for a compositional semantics of PPs* (grade: 8.5/10)
- September 2012 – July 2016 **BA Spanish Language & Culture – Utrecht University, NL ***
Specialization: theoretical linguistics (syntax)
Thesis: *El transporte de la negación: Un estudio empírico sobre las características modales y temporales del Transporte de la Negación* (grade: 8.5/10)
Details: ERASMUS+ Exchange – Universitat de València, ES; Descartes College interdisciplinary Honors minor
- August 2006 – May 2012 **Gymnasium – Marnix College, NL ***
Secondary school education at academic level
Specialization: natural sciences, math, languages (incl ancient Greek)

* graduated with distinction *or* best of class

Publications

- Slaats, S.**, H. Weissbart, J.M. Schoffelen, A.S. Meyer, A.E. Martin (2023). Delta-band neural responses to individual words are modulated by sentence processing. *Journal of Neuroscience*, 43 (26). <https://doi.org/10.1523/JNEUROSCI.0964-22.2023>
- González Alonso, J., J. Alemán Bañón, V. DeLuca, D. Miller, S. M. Pereira Soares, E. Puig Mayenco, **S. Slaats**, J. Rothman (2020). Event related potentials at initial exposure in third language acquisition: Implications from an artificial mini-grammar study. *Journal of Neurolinguistics* (56). <https://doi.org/10.1016/j.jneuroling.2020.100939>

Conference posters & talks

- 2023 **Architectures and Mechanisms in Language Processing (AMLaP) – BCBL, ES**
Poster: Do surprisal and entropy affect delta-band signatures of syntactic processing?
Brain Rhythms and Cortical Computation (BRhyCoCo) – Paris, FR
Poster: Do surprisal and entropy affect delta-band signatures of syntactic processing?
- 2022 **International Max Planck Research School for Language Sciences – Nijmegen, NL**
Talk: On the similarity between words and chameleons: Sentences affect spatial & temporal properties of responses to words
Dutch Society for Psychonomics (NVP) – Egmond aan Zee, NL
Poster: Sentences modulate the low-frequency neural response to words
- 2021 **Society for the Neurobiology of Language (SNL) – virtual edition**
Slide slam: Sentences modulate the low-frequency neural encoding of words
Architectures and Mechanisms in Language Processing (AMLaP) – virtual edition
Poster: Sentences modulate the low-frequency neural encoding of words
- 2020 **Architectures and Mechanisms in Language Processing (AMLaP) – virtual edition**
Poster: Typological similarity affects attention in L3 mini-grammar learning: An ERP study

Honors and awards

- 2022 – Poster prize Dutch Society for Psychonomics (NVP)
2016 – Highly Commended The Undergraduate Awards

Funding

- 2019 – 4-year fellowship International Max Planck Research School for Language Science
2018 – 1-year scholarship VSB fonds

Teaching & supervision

- January - August 2023 **MSc thesis (University of Amsterdam, NL)**. Efference copies in syllable production: an EEG study (unofficial title).
Supervision. BSc thesis (Radboud University, NL). The influence of lexical surprisal on subject-verb agreement.
- November 2022 – Feb. 2023 **MA internship (Utrecht University, NL)**. Temporal structure in speech affects the use of semantic context upon word processing [...].
- January - July 2022 **MA thesis (Radboud University, NL)**. Temporal structure in speech can affect semantic prediction: Evidence from the N400.
- October - December 2020 **Course: Using Python for Cognitive Science**

September 2017 – Nov 2017 Introduction to Python. Developed & taught with Teun van Gils.
Teaching assistant: Language comparison (Utrecht University, NL). Grading & providing feedback on homework. Formal syntax.

Administrative experience

March 2022 – September 2023 **Editor-in-chief of content – MPI TalkLing**
Science blog of the MPI for Psycholinguistics
www.mpi-talking.mpi.nl

October 2016 – August 2018 **Founder & editor-in-chief – LingUU Journal**
Peer-reviewed student journal of Linguistics at Utrecht University
www.linguujournal.nl/

February 2016 – October 2017 **Founder & secretary – Descartes Alumnigenootschap**
Alumni society for the Descartes Honours minor at Utrecht University in order to continue the interdisciplinary conversation
www.descartesalumnigenootschap.nl

October 2016 – January 2017 **Research assistant – Utrecht University, NL**
Task: part-of-speech tagging of the CHILDES-corpora

September 2015 – Oct. 2016 **President – svMT**
Board of collaboration of Modern Languages at Utrecht University

October 2015 – June 2016 **Student assistant – Utrecht University, NL**
BA Spanish Language & Culture
Tasks: administration, creation of promotional material

September 2015 – June 2016 **Student assistant – Utrecht University, NL**
BA Linguistics & Phonetics
Tasks: screening the educational program; creation of inventory of compatible Master's programs in the Netherlands

July 2015 – September 2016 **Secretary – SV Babel**
Study association of the BA Linguistics & Phonetics at Utrecht University
www.svbabel.nl

Other skills and qualifications

Natural languages C2 level English [Cambridge]
C2 level Spanish [Utrecht University]
Native Dutch

Programming languages Python, R, Matlab

Professional affiliations and memberships

SCONe: Scottish-EU Critical Oscillations Network <https://sites.dundee.ac.uk/scone>