SARAH TUNE, PhD

Senior Researcher
Auditory Cognition Group
Department of Psychology
University of Lübeck
Lübeck, Germany

*1983, Celle, Germany

RESEARCH INTEREST

- Auditory neuroscience and speech perception
- Sensory, cognitive and neurobiological predictors of listening success in the aging individual
- Statistical modelling of inter- and intra-individual variation in listening behavior
- Speech perception as model of age-related changes in perceptual inference

EDUCATION

[2023	*Habilitation (in preparation), Psychology, University of Lübeck]*
2014	**Dr. phil.**, University of Marburg (summa cum laude)
2010	**M.A. Germanic Linguistics**, University of Marburg *Focus:* Language and Cognition, Fast-Track PhD Program
2007	**B.A. Language and Communication**, University of Marburg
2002	**A-levels (Abitur)**, Kaiserin-Auguste-Viktoria-Gymnasium, Celle

CURRENT EMPLOYMENT

2021—	**Senior Researcher** (permanent position) Auditory Cognition Group, Department of Psychology, University of Lübeck, Prof. Jonas Obleser, *currently on part-time parental leave (40%) 01/2023–08/2023*
2022	*2 months parental leave (full-time)*

EMPLOYMENT

2016–2021	**Postdoctoral Researcher** (ERC-financed), Auditory Cognition Group, Department of Psychology, University of Lübeck, Prof. Jonas Obleser
2019	*10 months parental leave (full-time)*
2014–2016	**Postdoctoral Researcher**, Brain Circuits Laboratory, Department of Neurology, University of California, Irvine, USA, Prof. Steven L. Small
2010–2013 Uni-	**Doctoral Researcher,** Neurolinguistics Group, Department of Germanic Linguistics, versity of Marburg, Prof. Ina Bornkessel-Schlesewsky
2011–2012	**Visiting Scholar**, Brain Circuits Laboratory, Department of Neurology, University of California, Irvine, USA, Prof. Steven L. Small

| 2008–2010 | **Student assistant / Teaching assistant**, Neurolinguistics and Psycholinguistics Groups, University of Marburg |

FUNDING AND AWARDS

In preparation	**Does neural compensation mediate structural and cognitive decline in late-life depression? Insights from speech processing in the aging brain,** Project (PI: S.Tune, T. Bäumer) in DFG Research Unit proposal, Speaker: N. Bunzeck projected: € 560,000 (own project)
Under review after revision	**How perceptual inference changes with age: Behavioural and brain dynamics of speech perception**, DFG Independent Project proposal, PI: S. Tune projected: € 295,000
2019	**University of Lübeck Science Prize**, with Mohsen Alavash for joint first-author publication in PNAS, 2019 € 2500
2017	**Major contribution to R13 proposal** to secure funding for the Annual Meeting of the Society for the Neurobiology of Language National Institute of Health, PI: Prof. Steven L. Small $ 45,000
2015	**DAAD travel fellowship** to prepare return to the Germany academic system € 1,300
2013	**Travel fellowship,** Marburg University Research Academy, to meet with collaborators the University of California, Irvine, USA € 1,500
2013	**DAAD travel fellowship,** to attend the Annual Meeting of the Society for the Neurobiology of Language, San Diego, USA € 1,300
2011	**DAAD doctoral fellowhship** for a 5-month research stay at the University of California, Irvine € 4,000
2005	**ERASMUS-Award** for studying abroad, University of Trento, Italy € 1,000

INVITED TALKS

2022	*Auditive Kognition: Hören, Zuhören und das individuelle Gehirn,* Internationaler Kongress der Europäischen Union der Hörakustiker e.V. (EUHA), Hannover
	Neural signatures of adaptive listening behavior. Eriksholm Attention Meeting, (online)
2021	*Neural signatures of adaptive listening behavior.* Oxford Oscillations Meeting, (online)
2020	*States and traits of selective listening.* Hanseatic Hearing [Hören in der Hansestadt], Lübeck

2018	*Speech comprehension in the middle-aged listener. On the role of neural mechanisms and cognitive strategies.* Linguistisches Kolloquium, University of Mainz
2017	*The neural fate of attended and ignored speech.* Tagung experimentell arbeitender Psychologen (TeaP), Dresden
2015	*Context matters: rERP evidence provides new insights into the neural mechanisms of generating and updating predictions in sentence processing.* Neurolinguistisches Kolloquium, University of Potsdam

NATIONAL AND INTERNATIONAL COLLABORATIONS

2022—	Esra Al (Columbia University, USA)
2022—	Molly Henry (Toronto Metropolitan University, Canada)
2022—	Björn Herrmann (University of Toronto, Canada)
2022—	Jonathan Peelle (Northeastern University, USA)
2022—	Emiliano Zaccarella (MPI Leipzig)
2021—	Marc Via Garcia (University of Barcelona, Spain)
2020—	Gesa Hartwigsen (MPI Leipzig)
2019—	Sarah Jessen (Universität zu Lübeck)
2019—	Henrik Oster (Universität zu Lübeck)
2011—	Steven Small (University of Texas at Dallas, USA)

REVIEW SERVICE

| 2011— | *Ad hoc reviews for:*
Journal of Neuroscience,
NeuroImage,
Human Brain Mapping,
Cortex,
PLOS Computational Biology,
European Journal of Neuroscience,
Brain Research,
eNeuro,
Brain and Language,
Language and Speech,
Language, Neuroscience and Cognition,
Scientific Reports,
Neuropsychologia,
Quartely Journal of Experimental Psychology,
Psychophysiology |

ACADEMIC SERVICE

| 2017–2018 | Member, Search Committee Chair in Differential Psychology and Diagnostics, University of Lübeck |

| 2018— | Member, Board of Examiners, Department of Psychology, University of Lübeck |
| 2016 | Member, PhD Proposal Committee (Louise Kyriaki), School of Psychology and Social Policy, University of South Australia |

OPEN SCIENCE

| 2021— | Member *Open Science Initiative Lübeck*, Lübeck Open Science Prize Committee |

FORTBILDUNGEN UND ZERTIFIKATE

2016	Certificate of Teaching Excellence Program, Center for Engaged Instruction, University of California, Irvine
2013	Certificate for course on the developement and management of research projects (~120h), Graduiertenakademie University of Kassel
2012	Professional Mentoring, Marburg University Research Academy (MARA)
2011	Introduction to data analysis with R, Marburg University Research Academy (MARA)

ORGANISATION OF WORKSHOPS, SYMPOSIA, LECTURE SERIES

2022	Virtual Lecture Series *NeuroHour - Time for Neurocomputational Models of Cognition*, Organisation
2021	Workshop *A crashcourse in biostatistics and statistical power*, Universität of Lübeck, Instructor
2017	*Speech and Noise along the Auditory Pathway (SNAP) Workshop*, University of Lübeck, Program Committee
2013	Workshop *Introduction to statistical analysis with R*, Marburg University Research Academy (MARA), Instructor

MEMBERSHIPS

Deutsche Gesellschaft für Psychologie (DGPs)

Deutsche Gesellschaft für Sprachwissenschaft (DGfS)

Society for the Neurobiology of Language (SNL)

Society for Neuroscience (SfN)

WINnovation - Women in Innovation

LIST OF PUBLICATIONS

Peer-reviewed original work

1. Jessen, S., Obleser, J., & Tune, S. (2021). Neural Tracking in Infants—an Analytical Tool for Multisensory Social Processing in Development. *Developmental Cognitive Neuroscience, 52, 101034*

2. Schmitt, L.M., Erb, J., **Tune, S.**, Rysop, A., Hartwigsen, G., Obleser, J. (2021). Predicting speech from a cortical hierarchy of event-based timescales. *Science Advances, 7 (49), eabi6070*

3. Alavash, M., **Tune, S.**, Obleser, J. (2021). Dynamic large-scale connectivity of intrinsic neural oscillations support adaptive listening in challenging conditions. *PLOS Biology, 19 (10), e3001410*

4. **Tune, S.**, Fiedler, L., Alavash, M., & Obleser, J. (2021). Neural attentional-filter mechanisms of listening success in middle-aged and older individuals. *Nature Communications 12 (1), 1-14*

5. Kraus, F., **Tune, S.**, Ruhe, A., Obleser, J., & Wöstmann, M. (2021). Unilateral acoustic degradation delays attentional separation of competing speech. *Trends in Hearing, 25, 1–13*.

6. Obleser, J. , Kreitewolf, J, Vielhauer, R., Lindner, f., David, C., Oster, H*., & **Tune, S**.* (2021). Circadian fluctuations in glucocorticoid level predict perceptual discrimination sensitivity. *iScience, 102345*.

7. Waschke, L., **Tune, S.**, & Obleser, J. (2019). Local cortical desynchronization and pupil-linked arousal differentially shape brain states for optimal sensory performance. *Elife, 8:e51501*.

8. Kreitewolf, J., Wöstmann, M., **Tune, S**., Plöchl, M., & Obleser, J. (2019). Working-memory disruption by task-irrelevant talkers depends on degree of talker familiarity. *Attention Perception & Psychophysics, 81 (4), 1108-1118*.

9. Alavash, M., **Tune, S**.*, & Obleser, J. (2019). Modular reconfiguration of an auditory control brain network supports adaptive listening behavior. *PNAS, 16 (2), 660–669*.

10. **Tune, S.**, Wöstmann, M., & Obleser, J. (2018). Probing the limits of alpha power lateralization as a neural marker of selective attention in the middle-aged listener. *European Journal of Neuroscience, 48 (7), 2537–2550*.

11. Ringer, C., **Tune, S.**, Bertoune, M. A., Schwarzbach, H., Tsujikawa, K., Weihe, E., & Schütz, B. (2017). Disruption of calcitonin gene-related peptide signaling accelerates muscle denervation and dampens cytotoxic neuroinflammation in SOD1 mutant mice. *Cellular and Molecular Life Sciences, 74(2), 339–358*.

12. Kandylaki, K., Nagels, A., **Tune, S.**, Kircher, T., Wiese, R., Schlesewsky, M., & Bornkessel-Schlesewsky, I. (2016). Predicting "when" in discourse engages the human dorsal auditory stream: an fMRI study using naturalistic stories. *Journal of Neuroscience 36(48), 12180–12191.*

13. **Tune, S.**, Schlesewsky, M., Nagels, A., Small, S.L., & Bornkessel-Schlesewsky, I. (2016). Sentence understanding depends on contextual use of semantic and real world knowledge. *NeuroImage (136), 10–25.*

14. Kandylaki, K., Nagels, A., **Tune, S.**, Wiese, R., Bornkessel-Schlesewsky, I., & Kircher, T. (2015). Processing of false belief passages during natural story comprehension: an fMRI study. *Human Brain Mapping 36 (11), 4231–4246*.

15. **Tune, S.**, Schlesewsky, M., Small, S.L., Sanford, A.J., Bohan, J., Sassenhagen, J., & Bornkessel-Schlesewsky, I. (2014). Cross-linguistic variation in the neurophysiological response to semantic processing: Evidence from anomalies at the borderline of awareness. *Neuropsychologia 56, 147–166*.

16. Lotze, N.*, **Tune, S.***, Schlesewsky, M., & Bornkessel-Schlesewsky, I. (2011). Meaningful physical changes mediate lexical-semantic integration: Evidence for the interplay between top-down and bottom-up information sources in the N400. *Neuropsychologia 49 (13), 3573–3582*.

17. Bornkessel-Schlesewsky, I., Kretzschmar, F., **Tune, S**., Wang, L., Gen, S., Philipp, M., Roehm, D., & Schlesewsky, M. (2011). Think globally: Cross-linguistic variation in electrophysiological activity during sentence comprehension. *Brain and Language 117 (3), 133–152*.

* geteilte Erst/Letztautorenschaft

Opinion articles and reviews

1. Duncan, E.S., **Tune, S.**, & Small, S.L. (2016). The Neurobiology of Language: Relevance to Linguistics. *Yearbook of the Poznan Linguistic Meeting (2), 49–66*.

2. **Tune, S.** & Asaridou, S.S. (2016). Stimulating the semantic network: what can TMS tell us about the roles of the posterior middle temporal gyrus and angular gyrus? *Journal of Neuroscience 36 (16), 4405–4407.*

Manuscripts in preparation / preprints

1. Kraus,F., **Tune, S.**, Obleser, J.; Herrmann, B. Neural alpha oscillations and pupil size differentially index cognitive load under competing audio-visual task conditions, *bioRxiv (under review)*

2. **Tune, S.** & Obleser, J. Two-year change in individual listening performance is independent of concurrent change in sensory encoding strength *(in preparation)*.

Book chapters / Conference proceedings

Tune, S. und Obleser, J. (2022). A parsimonious look at neural oscillations in speech perception. In Popper, A. und Fay, R. (Eds.). *The Auditory Cognitive Neuroscience of Speech Perception: Springer Handbook of Auditory Research.*

Tune, S. und Obleser, J. (2021). Explaining semantic cognition in aging – evidence from a longitudinal large-sample study. Annual Meeting of the Society for the Neurobiology of Language [Conference proceedings]

Monographs

Tune, S. (2014) The neurocognitive processing of plausibility and real-world knowledge: A cross-linguistic investigation. *Dissertation*, University of Marburg.

Poster presentations as first-author

2021	Annual Meeting of the Society for the Neurobiology of Language (SNL), virtual
	Annual Meeting of the Society for Neuroscience (SfN), virtual
	Advances and Perspectives in Auditory Neuroscience (APAN), virtual
	CBBM Research Day, Universität zu Lübeck
2018	Annual Meeting of the Society for Neuroscience (SfN), Washington, USA
	Advances and Perspectives in Auditory Neuroscience (APAN), Washington, USA

2017	Annual Meeting of the Society for Neuroscience (SfN), Washington, USA
	Advances and Perspectives in Auditory Neuroscience (APAN), Washington, USA
	Annual Meeting of the Society for the Neurobiology of Language (SNL), Baltimore, USA
	CuttingEEG Symposium, Glasgow, UK
	Signal and Noise Along the Auditory Pathway (SNAP) Workshop, Lübeck, Germany
2015	Annual Meeting of the Society for the Neurobiology of Language (SNL), Chicago, USA
2013	Annual Meeting of the Society for the Neurobiology of Language (SNL), San Diego, USA
2012	Neurobiology of Language Conference (NLC), San Sebastian, Spanien
2011	Neurobiology of Language Conference (NLC), Annapolis, USA

Poster presentations as co-author /senior-author (*)

2021	CBBM Research Day, University of Lübeck, *Alavash et al.*
2019	Annual Meeting of the Cognitive Neuroscience Society (CNS), San Francisco, USA, *Schmitt et al.*
	Conference on Cognitive Computational Neuroscience, Berlin *Schmitt et al.; Alavash et al.*
	FFR Workshop, University College London, UK *Kreitewolf et al.*
	CBBM Research Day, University of Lübeck, *Alavash et al.; Kreitewolf et al., Schmitt et al.*
2018	Sixth biennial conference on resting state and brain connectivity, Montreal, Canada, *Alavash et al.*
	Salzburg Annual Meeting of Brain and Mind, Salzburg, *Alavash et al.*
2017	European Conference on Eye Movements, Wuppertal, *Weiss et al. **
2016	Stanford Undergraduate Psychology Conference, Stanford, USA, *Nadiadwala et al. **
	Annual Meeting of the Cognitive Neuroscience Society (CNS), New York City, USA, *Asaridou et al.*
2015	Undergraduate Research Opportunities Program (UROP) Symposium, Irvine, USA, *Goshtashbi et al. **
2014	Annual Meeting of the Society for the Neurobiology of Language (SNL), Amsterdam, *Schmuck et al.*

TEACHING

Lectures

SS 2021	Scientific Communication, Lübeck (M.Sc.)
WS 2018	Statistics II, Lübeck (B.Sc.)
SS 2013	Statistics for Linguists, Marburg (M.A.)
SS 2012	Statistics for Linguists, Marburg (M.A.)

Seminars

WS 2022	Statistics III, Lübeck (M.Sc.)
SS 2022	Statistical Literacy, Lübeck (M.Sc.)
WS 2021	Multivariate Statistical Analyses, Lübeck (M.Sc.)
	Statistical Literacy, Lübeck (B.Sc. & M.Sc.)
SS 2021	Scientific Communication, Lübeck (M.Sc.)
WS 2020	Multivariate Statistical Analyses, Lübeck (M.Sc.)
WS 2016	Statistics II, Lübeck (B.Sc.)
WS 2012	Neurocognition of Speech Perception, Marburg (B.A.)
SS 2011	Statistics for Linguists, Marburg (M.A.)
WS 2010	Introduction to Linguistics I, Marburg (B.A.)
WS 2009	Introduction to Linguistics I, Marburg (B.A.)

Select single lectures

WS 2022	Auditory Cognition: Speech perception and language comprehension, Lübeck (M.Sc.)
WS 2021	Auditory Cognition: Speech perception and language comprehension; Auditory perception; Auditory selective attention, Lübeck (3 Lectures, M.Sc.)
WS 2018	Research Methods in Cognitive Neuroscience: MRT/fMRT/PET, Lübeck (4 Lectures, M.Sc.)
WS 2017	Research Methods in Cognitive Neuroscience: MRT/fMRT/PET, Lübeck (4 Lectures, M.Sc.)
	Auditory Cognition: Speech perception and language comprehension, Lübeck (M.Sc.)
WS 2016	Research Methods in Cognitive Neuroscience: MRT/fMRT/PET, Lübeck (4 Lectures, M.Sc.)

Organisation of Journal Clubs

2022	Journal Club as part of lecture series *NeuroHour – Time for Neurocomputational Models of Cognition*, University of Lübeck

2011–2013   Neurolinguistics Journal Club, Department of Germanic Linguistics, University of Marburg

SUPERVISION, CO-SUPERVISION AND MENTORING

Mentored doctoral students

2022 —   Giannina Puddu Gallardo, University of Barcelona

2022 —   Elena Pyatigorskaya, MPI Leipzig

Co-supervised doctoral students

2022 —   Merle Schuckart, University of Lübeck

2021 —   Frauke Krauss, University of Lübeck

2020–2023   Martin Orf, University of Lübeck

2017–2020   Leonhard Waschke, University of Lübeck

2018–2021   Lea-Maria Schmitt, University of Lübeck

2016–2018   Fiona Weiss, University of Marburg

Supervision of final theses (B.Sc./M.Sc./B.A.)

2022   Sarah Weber (University of Lübeck, B.Sc. Psychology, Co-Supervision)

Sarah Pieper (University of Lübeck, B.Sc. Psychology, Co-Supervision)

Anna Neuwerk (University of Lübeck, B.Sc. Psychology, Co-Supervision)

Antje Stüven (University of Lübeck, B.Sc. Psychology, Co-Supervision)

2021   Alexander Kluge (University of Lübeck, M.Sc. Psychology, Supervision)

2020   Rebecca Baronesse von Engelhardt (University of Lübeck, B.Sc. Psychology, Co-Supervision)

Merle Henke (University of Lübeck, B.Sc. Psychology, Defense committee)

Nicole Bitterman (University of Lübeck, M.Sc. Psychology, Defense committee)

2019   Elisabeth Ni (University of Lübeck, B.Sc. Psychology, Co-Supervision)

2018   Kristin Derben (University of Lübeck, B.Sc. Psychology, Supervision)

Annika Struck (University of Lübeck, B.Sc. Psychology, Co-Supervision)

2015   Nusheen Goshtasbi (University of California, Irvine, B.Sc. Cognitive Science, Supervision)

Ayesha Nadiadwala (University of California, Irvine, B.Sc. Cognitive Science, Supervision)

2013   Jessica Heinen (University of Marburg, B.A. Language and Literature, Supervision)

Verena Schropp (University of Marburg, B.A. Language and Communication, Supervision)

Supervised interns and student assistants

2022—	Helena Finn, University of Lübeck
2021—	Aigerim Tuichieva, University of Lübeck
2020–2022	Rebecca Baronesse von Engelhardt, University of Lübeck
2020–2022	Florian Kroon, University of Lübeck
2020–2021	Larissa Scheller, University of Lübeck
2020–2021	Christine Sickert, University of Lübeck
2019–2020	Frauke Krauss, University of Lübeck
2018–2019	Tabea Landschoff, University of Lübeck
2018–2019	Elisabeth Ni, University of Lübeck
2018–2019	Lynn Gärtner, University of Lübeck
2017–2019	Annika Struck, University of Lübeck
2017–2018	Anna Ruhe, University of Lübeck
2017–2018	Ricarda Vielhauer, University of Lübeck
2017–2018	Simon Grosnick, University of Lübeck
2016–2018	Felix Deilmann, University of Lübeck
2016–2018	Philipp Seidel, University of Lübeck
2015–2016	Nusheen Gostashi, University of California
2015–2016	Ayesha Nadiadwala, University of California
2011–2013	Aiden Brennan, University of Marburg
2011–2013	Verena Schropp, University of Marburg
2010–2013	Greta Frank, University of Marburg
2010–2012	Fritzi Milde, University of Marburg

Mentoring

2012 — 2013	ProMotivation Programm, Marburg University Research Academy (MARA), Mentor