

School of Psychology,
University of Birmingham

RESEARCH INTERESTS

My research focuses on the neurobiology of language processing, with a special focus on how sentence-level processes and interactive communication are supported by the brain. I also study how the neurobiological infrastructure of language processing changes throughout the lifespan and I research individual differences and lifestyle factors that can mitigate language decline in older age.

POSITIONS

2021-present Associate Professor, School of Psychology, University of Birmingham, United Kingdom
2015-2021 Assistant Professor, School of Psychology, University of Birmingham, United Kingdom
2012-2014 Staff Researcher, Max Planck Institute for Psycholinguistics, the Netherlands

EDUCATION

2018 Postgraduate Certificate in Higher Education (PGCHE) *with distinction*
2012 PhD dissertation "Structuring language: Contributions to the neurocognition of syntax". PhD in Social Sciences, Radboud University Nijmegen, the Netherlands
2008 Master Psychology, *Magna Cum Laude*
Faculty of Psychology and Educational Sciences, University of Leuven, Belgium
2005 Bachelor Psychology, *Cum Laude*
Faculty of Psychology and Educational Sciences, University of Leuven, Belgium

AWARDS AND RESEARCH GRANTS

10.2020-10.2023: Research Council of Norway Research Grant for "Fitness, Ageing and Bilingualism (FAB): The benefits of regular physical activity and bilingualism for language abilities in healthy ageing" (12,000,000 NOK) (multi-centre grant, Norway lead: Prof. L. Wheeldon; UK lead: Dr. K. Segaert)
10.2019-10.2022: Hillary Green PhD studentship for Roksana Markiewicz on "Synchronized brains: How empathy orchestrates the neurobiological mechanisms for cooperative success." (£50,000) (As main PhD-student supervisor)
05.2019-05.2020: Bridge (BiRmtingham-Illinois Partnership for Discovery, EnGagement and Education) Seed Funding for "A joint investigation of language change and decline in healthy ageing", with Prof. K. Federmeier - University of Illinois Urbana-Champaign (£12,500) (As principal investigator)
11.2018-11.2021 Award received from Economic and Social Research Council (ESRC) for research on "The effects of individual differences in bilingual experience on cognitive control networks" (£437,050) (As co-investigator)
07.2018-08.2018 Funding received from University of Birmingham Liberal Arts & Natural Sciences program for research on "Relating physical fitness to language decline in ageing" (£2,624) (As principal investigator)
11.2017-04.2018 University of Agder research project development grant (35,000 NOK) (As coinvestigator)
09.2016-09.2019 Award received from Economic and Social Research Council Doctoral Training Centre (ESRC DTC) for named PhD studentship (Sophie M Hardy) on "Investigating changes in syntactic processing across the lifespan" (£50,000) (As main supervisor)
03.2016-09.2016 The Wellcome Trust, ISSF (Institutional Strategic Support Fund) Independent Research Award for research on "Language and speaking skill in the elderly and the ameliorating effects of physical fitness" (£16,719) (As principal investigator)
04.2015-09.2015 The Wellcome Trust, ISSF (Institutional Strategic Support Fund) Pump-priming Award for research on "Uncovering the neurobiological infrastructure of syntactic

language comprehension using a multi-modal simultaneous EEG-fMRI imaging approach" (£10,371) (As principal investigator)

SUPERVISION OF GRADUATE STUDENTS

- ongoing* Supervision of two PhD students at the University of Birmingham (as main supervisor: R. Markiewicz; as co-supervisor: E. Sutton)
- 2020* Supervision to successful completion of Dr. C. Poulisse (10.01.2020), University of Birmingham (as main supervisor)
- 2020* Supervision to successful completion of Dr. S. Hardy (26.03.2020), University of Birmingham (as main supervisor)
- 2019* Co-supervision to successful completion of Dr. K. Suen, University of Birmingham (co-supervisor)
- 2017* Supervision to successful completion of Dr. L. Schoot (20.02.2017), Radboud University, Netherlands (main supervisor)
- 2017* Supervision to successful completion of Dr. E. Heyselaar (02.06.2017), Radboud University, Netherlands (main supervisor)
- 2017* Co-Supervision to successful PhD completion of Dr. A. Belavina Kuerten (27.06.2017), Universidade Federal de Santa Catarina, Brazil (co-supervisor)
- 2010-present* Supervision of numerous Msc students

MEDIA COVERAGE (selected list of examples):

On Segaert et al. 2018 in Scientific Reports:

New York Times: <https://www.nytimes.com/2018/05/15/magazine/exercise-language-muscle-memory-wordrecall-aging-fitness.html> - The Conversation: <https://theconversation.com/tip-of-the-tongue-moments-lesslikely-in-fitter-older-people-95686> - The Telegraph: <https://www.telegraph.co.uk/science/2018/04/30/exercise-old-age-helps-words-past-tip-tongue-scientistssay/> - WebMD: <https://www.webmd.com/healthy-aging/news/20180430/whats-that-word-fitness-helpseniors-find-it#1> - MexicalXpress: <https://medicalxpress.com/news/2018-04-higher-aerobic-wordproduction-skills.html> - ScienceDaily: <https://www.sciencedaily.com/releases/2018/04/180430075622.htm> - Reuters: <https://uk.reuters.com/article/us-health-aging-speaking/physical-fitness-linked-to-language-skills-inolder-adults-idUKKBN1I24AF> - Daily Mail: <http://www.dailymail.co.uk/health/article-5682607/Fitter-olderpeople-likely-forget-words-study-finds.html> Etc.

On Segaert et al. 2018 in NeuroImage Clinical:

The Independent: <https://www.independent.co.uk/news/reading-test-alzheimers-disease-predict-chancescientists-university-of-birmingham-a8015781.html> - Science Daily: <https://www.sciencedaily.com/releases/2017/10/171020092223.htm> - Gulf Times: <http://www.gulftimes.com/story/568343/Study-on-identifying-patients-likely-to-develop-AI> - New Zealand Herald: https://www.nzherald.co.nz/health-wellbeing/news/article.cfm?c_id=1501238&objectid=11935515 - MedicalXpress: <https://medicalxpress.com/news/2017-10-word-patients-potential-alzheimer-disease.html> - Etc.

INSTITUTIONAL RESPONSIBILITIES

- 2020-present* Panel member for Wellcome Trust ISSF Career Development Hub, University of Birmingham
- 2020-present* Panel member for the Misconduct Committee of the College for Life and Environmental Sciences, University of Birmingham
- 2019-present* Senior Admissions Tutor for the School of Psychology, University of Birmingham
- 2017-present* Research Lead for the Language, interaction and social cognition Research Theme (uniting 12 lecturers and professors), School of Psychology, University of Birmingham, UK
- 2017-2018* Member of the Science, Technology, Engineering and Mathematics (STEM) Ethical Review Committee for the University of Birmingham, UK
- 2012-2015* Initiator and coordinator of an interactive public engagement website with Questions and Answers about language, available on Max Planck Institute for Psycholinguistics (Netherlands) website (www.mpi.nl)

ACADEMIC SERVICE

Academic editor:

Cognition (2021-present)
Scientific Reports (2018-present)
PLoS One (2018-present)
Brain Sciences (2020)

Peer review for journals:

Brain and Language, Frontiers in Language Sciences, Neuropsychologia, Cognition, Cerebral Cortex, PNAS, Cognitive Neuroscience, Neuroimage, PLoS One, Journal of Memory and Language, European Journal of Neuroscience, Journal of Experimental Psychology: Learning, Memory, and Cognition, Language, Language Learning, Discourse Processes, Lingua, Brain and Behavior, Neurobiology of Ageing

Peer review for conferences:

Society for Neurobiology of Language, Organization for Human Brain Mapping, AMLAP

PhD external examiner:

Dr. M. Kos (Radboud University), Dr. A. Veenstra (Radboud University), Dr. Merel Muylle (University of Gent), Dr. Consuelo Vidal Gran (University of Birmingham)

Research grants reviewed for:

Neurological Foundation of New Zealand, US National Science Foundation, NWO

TEACHING ACTIVITIES

- 2018 Teaching qualification obtained: Postgraduate Certificate in Higher Education (PGCHE) - University of Birmingham, UK
- 2020-present Psychology Bsc: Brain Health across the Lifespan (module lead, University of Birmingham, UK)
- 2020-present Psychology Bsc: Language and Communication, Lifespan Psychology B (guest lectures, University of Birmingham, UK)
- 2018-present MSci BICN: Applications of Brain Imaging in Cognitive Neuroscience (guest lecture, University of Birmingham, UK)
- 2016-present Psychology Bsc: Memory and Language, Cognitive Psychology (lecture series, University of Birmingham, UK)
- 2013 Cognitive Neuroscience Msc: Neurobiology and evolution of language (guest lectures, Radboud University, Netherlands)
- 2010-2013 Linguistics MA: Neurolinguistics (guest lectures, Radboud University, Netherlands)

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2012-present Member of the Society for Neurobiology of Language

PUBLICATIONS – see for an up to date list, including links to preprints: *katriensegaert.com*

Google scholar H-index: 18

ORCHID: <https://orcid.org/0000-0002-3002-5837>

- Segaert, K.**, Poullisse, C., Markiewicz, R., Wheeldon, L., Marchment, D., Adler, Z., Howett, D.5 Chan, D., Mazaheri, A. Detecting impaired language processing in MCI patients using around-the-ear cEEgrid electrodes. In press with Psychophysiology. Preprint available on medrxiv
- Hardy, S., **Segaert, K.**, Wheeldon, L. (2021) Age-related effects on lexical, but not syntactic, processes during sentence production. Language, Cognition and Neuroscience, DOI: 10.1080/23273798.2021.1948081.
- Xia, J., Mazaheri, A., **Segaert, K.**, Salmon, D. P., Harvey, D., Shapiro, K., Kutas, M., Olichney, J.M. (2020) Event-related potential and EEG oscillatory predictors of verbal memory in mild cognitive impairment, Brain Communications, fcaa213, <https://doi.org/10.1093/braincomms/fcaa213>

- Heyselaar, E., Wheeldon, L., & **Segaert, K.** (2020). Structural priming is supported by different components of non-declarative memory: Evidence from priming across the lifespan. *JEP:LMC*. Published online ahead of print doi: 10.1037/xlm0000955
- Poullisse, C., Wheeldon, L., Limachya, R., Mazaheri, A., **Segaert, K.** (2020) The oscillatory mechanisms associated with syntactic binding in healthy ageing. *Neuropsychologia*, 146, 107523. <https://doi.org/10.1016/j.neuropsychologia.2020.107523>
- DeLuca, V., **Segaert, K.**, Mazaheri, A., & Krott, A. (2020) Understanding bilingual brain function and structure changes? U Bet! A Unified Bilingual Experience Trajectory model. *Journal of Neurolinguistics*, 56, 100930. <https://doi.org/10.1016/j.jneuroling.2020.100930>
- Hardy, S., **Segaert, K.**, Wheeldon, L. (2020). Healthy Ageing and Sentence Production: Disrupted Lexical Access in the Context of Intact Syntactic Planning. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.00257>
- Nieuwland, M., Barr, D., Bartolozzi, F., Busch-Moreno, S., Darley, E., Donaldson, D., Ferguson, H.J., Fu, X., Heyselaar, E., Huettig, F., Husband, E.M., Ito, A., Kazanina, N., Kogan, V., Kohut, Z., Kulakova, E., Meziere, D., Politzer-Ahles, S., Rousselet, G., Rueschemeyer, S.-A., **Segaert, K.**, Tuomainen, J., Von Grebmer Zu Wolfsturn, S. (2020) Dissociable effects of prediction and integration during language comprehension: Evidence from a large-scale study using brain potentials. *Philosophical Transactions of the Royal Society B*, 375(1791), 20180522.
- Hardy, S., Wheeldon, L., **Segaert, K.** (2020). Structural priming is determined by global syntax rather than internal phrasal structure: Evidence from young and older adults. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 46(4), 720–740. <https://doi.org/10.1037/xlm0000754>
- Sharoh, D., van Mourik, T., Bains, L.J., **Segaert, K.**, Weber, K., Hagoort, P., Norris, D. (2019). Laminar specific fMRI reveals directed interactions in distributed networks during language processing. *Proceedings of the National Academy of Sciences*, 201907858; DOI: 10.1073/pnas.1907858116
- Schoot, L., Hagoort, P., **Segaert, K.** (2019) Stronger syntactic alignment in the presence of an interlocutor. *Frontiers in Psychology*. 10:685. doi: 10.3389/fpsyg.2019.00685 (PDF)
- Poullisse, C., Wheeldon, L., **Segaert, K.** (2019). Evidence against preserved syntactic comprehension in healthy aging. *Journal of Experimental Psychology: Learning, Memory and Cognition*. Advance online publication. <http://dx.doi.org/10.1037/xlm0000707>
- Segaert, K.** (2019) Priming Effects. In: Zeigler-Hill V., Shackelford T. (eds) *Encyclopedia of Personality and Individual Differences*. Springer, Cham. doi.org/10.1007/978-3-319-28099-8_479-1
- Segaert, K.**, Lucas, S.J.E., Burley, C.V., Segaert, P., Milner, A.E., Ryan, M., Wheeldon, L. (2018) Higher physical fitness levels are associated with less language decline in healthy ageing. *Scientific Reports*, 8:6715. doi: 10.1038/s41598-018-24972-1
- Segaert, K.**, Mazaheri, A., & Hagoort, P. (2018). Binding language: Structuring sentences through precisely timed oscillatory mechanisms. *European Journal of Neuroscience*, 1-12. doi:10.1111/ejn.13816.
- Heyselaar, E., Mazaheri, A., Hagoort, P. & **Segaert, K.** (2018) Changes in alpha activity reveal that social opinion modulates attention allocation during face processing. *NeuroImage*, 174, 432-440. doi: 10.1016/j.neuroimage.2018.03.034.
- Nieuwland M., Politzer-Ahles S., Heyselaar, E., **Segaert, K.**, Darley, E., Kazanina, N., Von Grebmer Zu Wolfsturn, S., Bartolozzi, F., Kogan, V., Ito, A., Mézière, D., Barr, D.J., Rousselet, G., Ferguson, H.J., Busch-Moreno, S., Fu, X., Tuomainen, J., Kulakova, E., Husband, E.M., Donaldson, D.L., Kohút, Z., Rueschemeyer, S.-A., Huettig, F. (2018) Large-scale replication study reveals a limit on probabilistic prediction in language comprehension. *eLife* 2018;7:e33468. doi: <https://doi.org/10.7554/eLife.33468>
- Heyselaar, E. & **Segaert, K.** (2018) Memory encoding of syntactic information involves domain-general attentional resources. Evidence from dual-task studies. *Quarterly Journal of Experimental Psychology*. <https://doi.org/10.1177/1747021818801249>
- Segaert, K.***, Mazaheri, A.*, Olichney, J., Niu, J.-Q., Yang, J.-C., Shapiro, K., Bowman, H. (2018) EEG oscillations during word processing predict MCI conversion to Alzheimer's disease. *NeuroImage Clinical*, 17, 188-197. <https://doi.org/10.1016/j.nicl.2017.10.009> *Shared first authorship
- Heyselaar, E., **Segaert, K.**, S. Walvoort, R. P. C. Kessels, Hagoort, P. (2017) The role of procedural memory in the skill for language: Evidence from syntactic priming in patients with amnesia. *Neuropsychologia*, 101, 97-105.

- Heyselaar, E., Hagoort, P., & **Segaert, K.** (2017) How social opinion influences syntactic processing - an investigation using Virtual Reality. *PLoS One*, 12(4): e0174405.
- Segaert, K.**, Wheeldon, L. & Hagoort, P. (2016) Unifying structural priming effects on syntactic choices and timing of sentence generation. *Journal of Memory and Language*, 91, 59-80.
- Schoot, L., Hagoort, P., **Segaert K.** (2016) What can we learn from a two-brain approach to verbal interaction? *Neuroscience and Biobehavioral Reviews*, 68, 454-459.
- Schoot, L., Heyselaar, E., Hagoort, P., & **Segaert, K.** (2016) Does syntactic alignment effectively influence how speakers are perceived by their conversation partner? *PLoS One*, 11(4): e015352.
- Segaert, K.** & Hagoort, P. (book chapter accepted for publication) Syntactic priming experiments reveal the influence of contextual and interactional information on syntactic processing. New ways of analyzing syntactic variation. Grondelaers, S. & van Hout, R. (editors). Publisher De Gruyter Mouton.
- Segaert, K.**, Cladder-Micus, M., Weber, K. & Hagoort, P. (2014) The influence of verb-bound syntactic preferences on the processing of syntactic structures. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40(5), 1448-460
- Schoot, L., Menenti, L., Hagoort, P., **Segaert, K.** (2014) A little more conversation - The influence of communicative context on syntactic priming in brain and behavior. *Frontiers in Psychology*, 5: 208.
- Segaert, K.**, Kempen, G., Petersson, K. M., & Hagoort, P. (2013). Syntactic priming and the lexical boost effect during sentence production and sentence comprehension: An fMRI study. *Brain and Language*, 124, 174-183.
- Segaert, K.***, Weber, K.*, De Lange, F., Petersson, K.M. & Hagoort, P. (2013). The suppression of repetition enhancement: A review of fMRI studies. *Neuropsychologia*, 51, 59-66. **equal contribution*
- Segaert, K.**, Menenti, L., Weber, K., Petersson, K. M., & Hagoort, P. (2012). Shared syntax in language production and language comprehension — An fMRI study. *Cerebral Cortex*, 22, 1662-1670.
- Menenti, L., **Segaert, K.**, & Hagoort, P. (2012). The neuronal infrastructure of speaking. *Brain and Language*, 122, 71-80.
- Segaert, K.**, Menenti, L., Weber, K., & Hagoort, P. (2011). A paradox of syntactic priming: Why response tendencies show priming for passives, and response latencies show priming for actives. *PLoS One*, 6(10), e24209.
- Menenti, L., Gierhan, S. M. E., **Segaert, K.**, & Hagoort, P. (2011). Shared language: Overlap and segregation of the neuronal infrastructure for speaking and listening revealed by functional MRI. *Psychological Science*, 22, 1173-1182.
- Segaert K.**, Nygard G., Wagemans, J. (2009) Identification of everyday objects on the basis of kinetic contours. *Vision Research*, 49, 417-428.

INVITED PRESENTATIONS

– for more talks and presentations see katriensegaert.com

- Segaert K. (2019) [Invited talk] The Neurobiology of Language Across the Lifespan. Talk in Beckman Institute Seminar Series, Illinois, USA
- Segaert, K. (2019) [Public engagement talk]. Using language with an ageing brain: How exercise can help you recall words. Pint of Science, Birmingham, UK.
- Segaert, K. (2019) [Talk in invited symposium]. The contribution of declarative and nondeclarative memory to syntactic priming. Belgian Association for Psychological Sciences, Liège, Belgium.
- Segaert, K. (2018) [Invited speaker]. Speaking and understanding language with an ageing brain. Event hosted by MMIN and CHBH at the University of Birmingham on Exploring Ageing: From medical imaging to human brain health. Birmingham, UK.
- Segaert, K. (2017) [Invited speaker] Senior moments? Physical fitness ameliorates age-related decline in language abilities. Invited presentation at the Rotman Research Institute at Baycrest, Toronto, Canada.
- Segaert, K. (2017) [Invited speaker] Senior moments? Physical fitness ameliorates age-related decline in language abilities. Invited presentation at the Brain Sciences Rounds of the Sunnybrook Research Institute, Toronto, Canada.

- Segaert, K. (2016) [Invited speaker] Syntactic Priming Effects as measured in Syntactic Choices and the Timing of Sentence Generation. Presentation at a workshop on Language across the lifespan. Florianopolis, Brazil.
- Segaert, K. (2016) [Invited speaker] Syntactic processing and influences of the dialogue context and interlocutor characteristics. Sociolinguistic Variation and Language Processing, Virginia Tech in Blacksburg Virginia, US.
- Segaert, K. (2014) [invited keynote lecture]. The neurobiology of sentence processing. Language and Neuroscience Conference, Universidade de Santa Catarina Florianopolis, Brazil.

CAREER BREAKS

15.03.2012-15.07.2012	Maternity leave (4 months)
01.05.2018-01.10.2018	Adoption leave (6 months)