Vitória Piai

Associate Professor & Principal Investigator, Radboud University, Donders Centre for Cognition
Junior Principal Investigator, Radboud University Medical Center, Donders Centre for Medical Neuroscience

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Research Summary

As a PhD candidate at Radboud University, supervised by Ardi Roelofs and Herbert Schriefers, I did research on the role of executive control in word production using behavioural methods, scalp electrophysiology, and functional MRI. Halfway into my PhD, I initiated my own, independent, research programme on the electrophysiology of language production in healthy speakers. I then obtained personal post-doctoral funding to go to the University of California Berkeley and expand my research towards populations with acquired language impairment. Under the mentoring of Bob Knight and Nina Dronkers, I used intracranial and scalp electrophysiology to investigate the neurophysiological underpinnings of language and language neuroplasticity.
Since 2017, I head the Language Function and Dysfunction group at the Donders Institute for Brain, Cognition and Behaviour in Nijmegen. My research programme focuses on the neuropsychological and neurophysiological basis of language in healthy adults and the impairment of language functioning after brain injury or damage to the speech organs. My research is characterised by bridging across the domains of language, memory, and executive control and by the way I use my strong fundamental and methodological background to approach the study of language disorders. Electrophysiology holds an important place in my research programme, which I combine with behavioural measures, non-invasive brain stimulation and lesion-symptom models.

Positions

Principal Investigator, *Radboud University, Donders Centre for Cognition, Department of Neuropsychology and Rehabilitation Psychology*, Nijmegen, the Netherlands — 2016-present

junior Principal Investigator, *Radboud University Medical Centre, Donders Centre for Medical Neuroscience, Department of Medical Psychology*, Nijmegen, the Netherlands — 2020-2022

Postdoctoral Researcher, *Radboud University Medical Centre, Donders Centre for Medical Neuroscience, Department of Medical Psychology*, Nijmegen, the Netherlands 2016-2020

Postdoctoral Fellow, *Helen Wills Neuroscience Institute, University of California, Berkeley* and *Center for Aphasia and Related Disorders, Veterans Affairs Health Care System Northern*, California, USA 2014-2016

Neurosurgery Department Affiliate, *University of California, San Francisco*, California, USA 2015-2016

Clinical Duties

Monitoring of function during awake craniotomies, developing and improving protocols for intraoperative assessments 2016-2022
Radboud University Medical Centre

Education

Ph.D. in Cognitive Neuroscience (distinction: "cum laude"), *Radboud University, Donders Graduate School for Cognitive Neuroscience & International Max Planck Research School for Language Sciences*, Nijmegen, the Netherlands 2009-2013

M.Sc. in Cognitive Neuroscience (distinction: "bene meritum"), *Radboud University*, Nijmegen, the Netherlands 2007-2009

B.A. in Linguistics (distinction: "cum laude"), *Utrecht University*, Utrecht, the Netherlands 2004-2007
B.A. in Portuguese Language and Culture (distinction: "cum laude"), *Utrecht University*, Utrecht, the Netherlands

Certificates

Basic course on Regulations and Organisation for clinical investigators (BROK) 2016
Dutch University Teaching Qualification (BKO) 2013

Competitive Funding

Principal Investigator

Vidi, *Netherlands Organisation for Scientific Research (NWO)*, "Fingerprints of language: towards a neurophysiological theory of retrieval from memory in speaking" (€ 800,000) 2022–2026

Internal PhD-grant round, *Radboud University, Donders Centre for Cognition*, "Let's have that conversation: Examining the demands of language use through the lens of young stroke" (€ 250,000) 2021–2025

Junior Principal Investigator premium, *Radboud University Medical Center*, Radboudumc funds dedicated to research excellence (€ 125,000) 2020–2024

Interfaculty collaborative grant, *Radboud University*, "Adaptive Language Initiative", with prof. James McQueen and prof. Aslı Özyürek (€ 150,000) 2020–2022

Internal PhD-grant round, *Radboud University, Donders Centre for Cognition*, "Unravelling how prefrontal cortex recruitment supports language functioning" (€ 250,000) 2019–2023

Veni, *Netherlands Organisation for Scientific Research (NWO)*, "Reorganising language: Neuroplasticity after left-hemisphere stroke through right-hemisphere recruitment" (€ 250,000) 2017–2020

Rubicon, *Netherlands Organisation for Scientific Research (NWO)*, "Towards a neural mechanism of context-driven memory access in language: prefrontal cortex and neuronal oscillations" (€ 127,690) 2014–2016

Niels Stensen Fellowship, *Niels Stensen Stichting*, "Towards a neuronal mechanism of context-dependent memory access in spoken word production" (€ 43,736). Declined due to Rubicon 2014–2015

Co-Investigator

Small Projects for NWA routes, *Netherlands Organisation for Scientific Research (NWO)*, "Dynamic Assessment of Everyday Communication using Virtual Reality: proof of concept for persons with aphasia (DCOM-VR)", main applicant: dr. M. Ruiter 2022-2024

PhDs in Humanities 2021, *Netherlands Organisation for Scientific Research (NWO)*, "Putting discourse particles in context: How people with acquired communication disorders use discourse particles", main applicant: prof. H. de Hoop, PhD candidate: Imke Wets, MA 2021-2025

Discovery Project, *Australian Research Council*, "How the brain produces speech: Neuronal oscillations to neuromodulation", main applicant: prof. de Zubicaray 2020-2024

Internal PhD-grant round, *Radboud University, Donders Centre for Cognition*, "The lexical interface in the brain", main applicants: prof. A. Roelofs, prof. J. McQueen (€ 234,000) 2016–2020

Internal Utilisation Grant Round, *Language in Interaction Consortium*, "SimpTell, an application for the training of elliptical language production style by patients with chronic Broca's aphasia", main applicants: prof. A. Roelofs, dr. M. Ruiter (€ 25,000) 2016

Awards and Prizes

Early Career Award, *International Neuropsychological Society* 2020

Early Career Award, *Dutch Psychonomic Society* 2019

Early Career Award, *Society for the Neurobiology of Language*

Early Career Award, *Dutch Society of Neuropsychology* 2018

Top reviewer for Radboud University (Arts and Humanities), *Publons* 2017

Top 10% of review contributions to field of Psychology, *Publons* 2016

Frye Stipend, *Radboud University, Nijmegen*, Awarded yearly to the ten most promising female researchers across Radboud University 2012

Publications

Asterisks indicate (PhD or undergraduate) student lead authors. Publication list also available in Google Scholar and ORCID. Full-texts of published papers available through my website

2023

*Weterings, R., Kessels, R.P.C., de Leeuw, F.-E., & **Piai, V.** (2023). Cognitive impairment after a stroke in young adults: a systematic review and meta-analysis. *International Journal of Stroke*. doi:10.1177/17474930231159267 Open data

*Jodzio, A., **Piai, V.**, Verhagen, L., Cameron, I., & Indefrey, P. (2023). Validity of chronometric TMS for probing the time-course of word production: a modified replication. *Cerebral Cortex*.

*Camerino, I. and *Ferreira, J. (shared first authors), Vonk, J. M., Kessels, R. P. C., de Leeuw, F.-E., Roelofs, A., Copland, D., & **Piai, V.** (2023). Systematic review and meta-analyses of word production abilities in dysfunction of the basal ganglia: Stroke, small vessel disease, Parkinson's disease, and Huntington's disease. *Neuropsychology Review*. doi:10.1007/s11065-022-09570-3 Open data

*Roos, N. M., Takashima, A., & **Piai, V.** (2023). Functional neuroanatomy of lexical access in contextually and visually guided spoken word production. *Cortex, 159*, 254–267. doi:10.1016/j.cortex.2022.10.014 Open data

2022

*Chupina, I., Sierpowska, J., Zheng, X. Y., Dewenter, A., Piastra, M., & **Piai, V.** (2022). Time course of right-hemisphere recruitment during word production following left-hemisphere damage: A single case of young stroke. *European Journal of Neuroscience*. doi:10.1111/ejn.15813

Ruiter, M. B., Otters, M. C., **Piai, V.**, Lotgering, E. A. M., Theunissen, J. E. M. C., & Rietveld, T. C. M. (2022). A transcription-less quantitative analysis of aphasic discourse elicited with an adapted version of the Amsterdam-Nijmegen Everyday Language Test (ANELT). *Aphasiology*. doi:10.1080/02687038.2022.2109124

León-Cabrera, P., **Piai, V.**, Morís, J., & Rodríguez-Fornells, A. (2022). Alpha power decreases associated with prediction in written and spoken sentence comprehension. *Neuropsychologia, 173*, 108286. doi:10.1016/j.neuropsychologia.2022.108286

Mercier, M. R., Dubarry, A.-S., Tadel, F., Avanzini, P., Axmacher, N., Cellier, D., Vecchio, M. D., Hamilton, L. S., Hermes, D., Kahana, M. J., Knight, R. T., Llorens, A., Megevand, P., Melloni, L., Miller, K. J., **Piai, V.**, Puce, A., Ramsey, N. F., Schwiedrzik, C. M., … Oostenveld, R. (2022). Advances in human intracranial electroencephalography research, guidelines and good practices. *NeuroImage, 260*, 119438. doi:10.1016/j.neuroimage.2022.119438

Piastra, M. C., Oostenveld, R., Schoffelen, J. M., & **Piai, V.** (2022). Estimating the influence of stroke lesions on MEG source reconstruction. *NeuroImage, 260*, 119422. doi:10.1016/j.neuroimage.2022.119422 Open data

Sierpowska, J. and Bryant, K. L., Janssen, N., Blazquez Freches, G., Römkens, M., Mangnus, M., Mars, R. B., & **Piai, V.** (2022). Comparing human and chimpanzee temporal lobe neuroanatomy reveals modifications to human language hubs beyond the frontotemporal arcuate fasciculus. *Proceedings of the National Academy of Sciences, 119*(28), e2118295119. doi:10.1073/pnas.2118295119 Open data

Sierpowska, J., Rofes, A., Dahlslätt, K., Mandonnet, E., ter Laan, M., Połczyńska, M., Hamer, P. D. W., Halaj, M., Spena, G., Meling, T. R., Motomura, K., Reyes, A. F., Campos, A. R., Robe, P. A., Zigiotto, L., Sarubbo, S., Freyschlag, C. F., Broen, M. P. G., Stranjalis, G., … **Piai, V.** (2022). The Aftercare Survey: Assessment and intervention practices after brain tumor surgery in Europe. *Neuro-Oncology Practice, 9*(4), 328-337. doi:10.1093/nop/npac029 Open data

De Wit, L., Kessels, R. P. C., Kurasz, A. M., Amofa, P., Sr., O'Shea, D., Marsiske, M., Chandler, M. J., et al. (2022). Declarative Learning, Priming, and Procedural Learning Performances comparing Individuals with Amnestic Mild Cognitive Impairment, and Cognitively Unimpaired Older Adults. *Journal of the International Neuropsychological Society*. doi:10.1017/s1355617722000029

*Cao, Y., Oostenveld, R., Alday, P. M., & **Piai, V.** (2022). Are alpha and beta oscillations spatially dissociated over the cortex in context-driven spoken-word production? *Psychophysiology, 59*(6), e13999. doi:10.1111/psyp.13999

Pruijssen, J. T., Wenmakers, A., Kessels, R. P. C., **Piai, V.**, Meijer, F. J. A., Pegge, S. A. H., Loonen, J. J., et al. (2022). Long-term cognitive, psychosocial, and neurovascular complications of unilateral head and neck irradiation in young to middle-aged adults. *BMC Cancer 22*, 244. BMC Cancer. doi:10.1186/s12885-022-09295-9

Piai, V., Jansen, F., Dahlslätt, K., Verdonck-de Leeuw, I. M., Prins, J., Leemans, R., Terhaard, C. H. J., Langendijk, J. A., Baatenburg de Jong, R. J., Smit, J. H., Takes, R., Kessels, R., & NET-QUBIC Consortium. (2022). Prevalence of neurocognitive and perceived speech deficits in patients with head and neck cancer before treatment: Associations with demographic, behavioral, and disease-related factors. *Head & Neck, 44*, 332-344. doi:10.1002/hed.26930

Hendriks, M. and van Ginkel, W. (shared first authors), Dijkstra, T., & **Piai, V.** (2022). Dropping beans or spilling secrets: How idiomatic context bias affects prediction. *Journal of Cognitive Neuroscience, 34 (2)*, 209–223. doi:10.1162/jocn_a_01798 Open data

*Janssen, N., Roelofs, A., van den Berg, E., Eikelboom, W. S., Holleman, M. A., in de Braek, D. M. J. M., Piguet, O., **Piai, V.**, & Kessels, R. P. C. (2022). The diagnostic value of language screening in Primary Progressive Aphasia: Validation and application of the Sydney Language Battery. *Journal of Speech, Language, and Hearing Research, 65*, 200-214. doi:10.1044/2021_JSLHR-21-00024

2021

*Hustá, C., Zheng, X., Papoutsi, C., & **Piai, V**. (2021). Electrophysiological signatures of conceptual and lexical retrieval from semantic memory. *Neuropsychologia, 161*, 107988. doi:10.1016/j.neuropsychologia.2021.107988 Open data

Severijnen, G. G. A., Bosker, H. R., **Piai, V.**, & McQueen, J. M. (2021). Listeners track talker-specific prosody to deal with talker-variability. *Brain Research, 1769*, 147605. doi:10.1016/j.brainres.2021.147605 Open data

De Wit, L., **Piai, V.**, Thangwaritorn, P., Johnson, B., O'Shea, D., Amofa, P., Marsiske, M., Kessels, R.P.C. Schaeffer, N., & Smith, G., (2021). Repetition Priming in individuals with amnestic Mild Cognitive Impairment and Alzheimer's dementia: A systematic review and meta-analysis. *Neuropsychology Review*, 1-19. doi: 10.1007/s11065-021-09504-5

Vos, S. H., Kessels, R. P. C., Vinke, R. S., Esselink, R. A. J., & **Piai, V.** (2021). The effect of deep brain stimulation of the subthalamic nucleus on language function in Parkinson's disease: A systematic review. *Journal of Speech, Language, and Hearing Research, 64*, 2794–2810. doi:10.1044/2021_JSLHR-20-00515

Piastra, M.-C., van der Cruijsen, J., **Piai, V.**, Jeukens, F. E. M., Manoochehri, M., Schouten, A., Selles, R. W., & Oostendorp, T. (2021). ASH: an automatic pipeline to generate realistic and individualized chronic stroke volume conduction head models. *Journal of Neural Engineering*, *18*, 044001. doi: 10.1088/1741-2552/abf00b Open data

Mickan, A., McQueen, J. M., Valentini, B., **Piai, V.** & Lemhöfer, K. (2021). Electrophysiological evidence for cross-language interference in foreign-language attrition. *Neuropsychologia, 155,* 107795. doi: 10.1016/j.neuropsychologia.2021.107795 Open data

*Mascelloni, M., McMahon, K., **Piai, V.**, Kleinman, D., & de Zubicaray, G. (2021). Mediated phonological-semantic priming in spoken word production: evidence for cascaded processing from picture-word interference. *Quarterly Journal of Experimental Psychology, 74(7)*, 1284-1294. Open data

*Camerino, I. L., Sierpowska, J., Reid, A., Meyer, N. H., Tuladhar, A. M., Kessels, R. P. C., de Leeuw, F.-E., & **Piai, V.** (2021). White matter hyperintensities at critical crossroads for executive function and verbal abilities in small vessel disease. *Human Brain Mapping, 42(4)*, 993-1002. doi: 10.1002/hbm.25273

*Abrahamse, R., Beynon, A., & **Piai, V.** (2021). Long-term auditory processing outcomes in early implanted young adults with cochlear implants: the MMN vs. P300 response. *Clinical Neurophysiology, 132(1)*, 258-268. doi: 10.1016/j.clinph.2020.09.022 Open data

2020

*Janssen, N., Roelofs, A., Mangnus, M., Sierpowska, J., Kessels, R. P. C., & **Piai, V.** (2020). How the speed of word finding depends on ventral tract integrity in primary progressive aphasia. *NeuroImage: Clinical, 28*, 102450. doi: 10.1016/j.nicl.2020.102450

Sezer, S., **Piai, V.**, Kessels, R. P. C., & ter Laan, M. (2020). Information recall in pre-operative consultation for glioma surgery using actual size three-dimensional models. *Journal of Clinical Medicine, 9(11)*, 3660. doi: 10.3390/jcm9113660

Piai, V., Nieberlein, L., & Hartwigsen, G. (2020). Effects of transcranial magnetic stimulation over the left posterior superior temporal gyrus on picture-word interference. *PLOS ONE*, 15(11): e0242941 Open data

*Todorova, L., Neville, D., & **Piai, V.** Lexical-semantic and executive deficits revealed by computational modelling: a drift diffusion model perspective. *Neuropsychologia, 146*, 107560. doi: 10.1016/j.neuropsychologia.2020.107560 Open data

*Roos, N. M., & **Piai, V.** Across-session consistency of context-driven language processing: a magnetoencephalography study. *European Journal of Neuroscience, 52(5)*, 3457-3469. doi: 10.1111/ejn.14785 Open data

Piai, V., De Witte, E., Sierpowska, J., Zheng, X., Hinkley, L. B., Mizuiri, D., Knight, R. T., Berger, M. S., & Nagarajan, S. S. Language neuroplasticity in brain tumour patients revealed by magnetoencephalography. *Journal of Cognitive Neuroscience, 32(8)*, 1497-1507. doi: 10.1162/jocn_a_01561 ✿ Open data

Piai, V., Klaus, J., & Rossetto, E. The lexical nature of alpha-beta oscillations in context-driven word production. *Journal of Neurolinguistics*, *55*, 100905. doi: 10.1016/j.jneuroling.2020.100905 ✿ Open data

*Ferreira, J., Roelofs, A., & **Piai, V.** The role of inhibition in inflectional encoding: producing the past tense. *Cognition*, *200*, 104235. doi: 10.1016/j.cognition.2020.104235 ✿ Open data

Williams Roberson, S., Shah, P., **Piai, V.**, Gatens, H., Krieger, A.M., Lucas II, T.H., Litt, B. Electrocorticography reveals spatiotemporal neuronal activation patterns of verbal fluency in patients with epilepsy. *Neuropsychologia*, *141*, 107386. doi: 10.1016/j.neuropsychologia.2020.107386

Jongman, S. R., **Piai, V.**, & Meyer, A. S. (2020). Planning for language production: the electrophysiological signature of attention to the cue to speak. *Language, Cognition and Neuroscience, 35*, 915-932. doi: 10.1080/23273798.2019.1690153

2019

Klaus, J., Schutter, D. J. L. G., & **Piai, V.** (2019). Transient perturbation of the left temporal cortex evokes plasticity-related reconfiguration of the lexical network. *Human Brain Mapping*, *41*, 1061-1071. doi: 10.1002/hbm.24860 ✿ Open data

Piai, V., et al. (2019). Assessment of neurocognitive impairment and speech functioning before head and neck cancer treatment. *JAMA Otolaryngology-Head & Neck Surgery*, *145*, 251-257. doi: 10.1001/jamaoto.2018.3981

Piai, V., Vos, S. H., Idelberger, R., Gans, P., Doorduin, J., & ter Laan, M. (2019). Awake surgery for a violin player: monitoring motor and music performance, a case report. *Archives of Clinical Neuropsychology*, *34*, 132–137. doi: 10.1093/arclin/acy009

Riès, S. K., **Piai, V.**, Perry, D., Griffin, S., Jordan, K., Henry, R., Knight, R. T., & Berger, M. S. (2019). Roles of ventral versus dorsal pathways in language production: an awake language mapping study. *Brain & Language*, *191*, 17-27. doi: 10.1016/j.bandl.2019.01.001

De Witte, E., **Piai, V.**, Kurteff, G., Cai, R., Mariën, P., Dronkers, N., Chang, E., & Berger, M. (2019). A valid alternative for in-person language assessments in brain tumor patients: feasibility and validity measures of the new TeleLanguage test. *Neuro-Oncology Practice*, *6*, 93-102. doi: 10.1093/nop/npy020

2018

Piai, V., Rommers, J., & Knight, R. T. (2018). Lesion evidence for a critical role of left posterior but not frontal areas in alpha-beta power decreases during context-driven word production. *European Journal of Neuroscience*, *48*, 2622-2629. doi: 10.1111/ejn.13695

Piai, V., & Knight, R. T. (2018). Lexical selection with competing distractors: Evidence from left temporal lobe lesions. *Psychonomic Bulletin & Review*, *25*, 710-717. doi: 10.3758/s13423-017-

1301-0

Baldo, J. V., Kacinik, N., Ludy, C., Paulraj, S., Moncrief, A., **Piai, V.**, Curran, B., Turken, A., Herron, T., & Dronkers, N. F. (2018). Voxel-based lesion analysis of brain regions underlying reading and writing. *Neuropsychologia*, *115*, 51-59. doi: 10.1016/j.neuropsychologia.2018.03.021

Wesdorp, M., et al. (2018). Heterozygous missense variants of LMX1A lead to nonsyndromic hearing impairment and vestibular dysfunction. *Human Genetics*, *137*, 389-400. doi: 10.1007/s00439-018-1880-5

Singh, T., Phillip, L., Behroozmand, R., Gleichgerrcht, E., **Piai, V.**, Fridriksson, J., & Bonilha, L. (2018). Pre-articulatory electrical activity associated with correct naming in individuals with aphasia. *Brain & Language*, *177-178*, 1-6. doi: 10.1016/j.bandl.2018.01.002

2017

Piai, V., Meyer, L., Dronkers, N. F., & Knight, R. T. (2017). Neuroplasticity of language in left-hemisphere stroke: subsecond electrophysiology and structural connections. *Human Brain Mapping*, *38*, 3151-3162. doi: 10.1002/hbm.23581

Jafarpour, A., **Piai, V.**, Lin, J. J., & Knight, R. T. (2017). Human hippocampal pre-activation predicts behavior. *Scientific Reports*, *7*, 5959. doi: 10.1038/s41598-017-06477-5

Roelofs, A., & **Piai, V.** (2017). Distributional analysis of semantic interference in picture naming. *Quarterly Journal of Experimental Psychology*, *70*, 782-792. doi: 10.1080/17470218.2016.1165264

2016

Piai, V., Anderson, K.L., Lin, J. J., Dewar, C., Parvizi, J., Dronkers, N. F., & Knight, R. T. (2016). Direct brain recordings reveal hippocampal rhythm underpinnings of language processing. *Proceedings of the National Academy of Sciences*, *113*, 11366–11371. doi: 10.1073/pnas.1603312113

Piai, V., Riès, S. K., & Swick, D. (2016). Lesions to lateral prefrontal cortex impair interference control in word production. *Frontiers in Human Neuroscience*, *9*, 721. doi: 10.3389/fnhum.2015.00721

Piai, V. (2016). The role of electrophysiology in informing theories of word production: a critical standpoint. *Language, Cognition and Neuroscience*, *31*, 471-473. doi: 10.1080/23273798.2015.1100749

Roelofs, A., **Piai, V.**, Garrido Rodriguez, G., & Chwilla, D. J. (2016). Electrophysiology of cross-language interference and facilitation in picture naming. *Cortex*, *76*, 1-16. doi: 10.1016/j.cortex.2015.12.003

2015

Piai, V., Roelofs, A., Rommers, J., Dahlslätt, K., & Maris, E. (2015). Withholding planned speech is reflected in synchronized beta-band oscillations. *Frontiers in Human Neuroscience*, *9*, 549. doi: 10.3389/fnhum.2015.00549

Piai, V., Roelofs, A., Rommers, J., & Maris, E. (2015). Beta oscillations reflect memory and motor aspects of spoken word production. *Human Brain Mapping*, *36*, 2767–2780. doi: 10.1002/hbm.22806

Piai, V., Roelofs, A. & Roete, I. (2015). Semantic interference in picture naming does not vary with reading ability. *Quarterly Journal of Experimental Psychology*, *68*, 1758-1768. doi: 10.1080/17470218.2014.985689

Piai, V., Roelofs, A., & Schriefers, H. (2015). Task choice and semantic interference in picture naming. *Acta Psychologica*, *157*, 13-22. doi: 10.1016/j.actpsy.2015.02.003

Piai, V., Riès, S. K., & Knight, R. T. (2015). The electrophysiology of language production: What could be improved. *Frontiers in Human Neuroscience*, *5*, 5160. doi: 10.3389/fpsyg.2014.01560

Piai, V., Dahlslätt, K., & Maris, E. (2015). Statistically comparing EEG/MEG waveforms on the basis of successive univariate test statistics: How bad can it be? *Psychophysiology*, *52*, 440-443. doi: 10.1111/psyp.12335

Roelofs, A., & **Piai, V.** (2015). Aspects of competition in word production: Reply to Mahon and Navarrete. *Cortex*, *69*, 420-424. doi: 10.1016/j.cortex.2014.10.016

2014

Piai, V., Roelofs, A., Jensen, O., Schoffelen, J. M., & Bonnefond, M. (2014). Distinct patterns of brain activity characterise lexical activation and competition in spoken word production. *PLoS ONE* 9(2): e88674. doi: 10.1371/journal.pone.0088674

Piai, V., Roelofs, A., & Schriefers, H. (2014). Locus of semantic interference in picture naming: Evidence from dual-task performance. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *40*, 147-165. doi: 10.1037/a0033745

Piai, V., Roelofs, A., & Maris, E. (2014). Oscillatory brain responses in spoken word production reflect lexical frequency and sentential constraint. *Neuropsychologia*, *53*, 146-156. doi: 10.1016/j.neuropsychologia.2013.11.014

Piai, V., Roelofs, A., Acheson, D. J., & Takashima, A. (2013). Attention for speaking: Domain-general control from anterior cingulate cortex in spoken word production. *Frontiers in Human Neuroscience*, 7:832. doi: 10.3389/fnhum.2013.00832

2013

Piai, V., Meyer, L., Schreuder, R., & Bastiaansen, M. C. M. (2013). Sit down and read on: Working memory and long-term memory in particle-verb processing. *Brain & Language*, *127*, 296-306. doi: 10.1016/j.bandl.2013.09.015

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Roelofs, A., & **Piai, V.** (2013). Associative facilitation in the stroop task: Comment on Mahon et al. (2012). *Cortex*, *49*, 1767-1769. doi: 10.1016/j.cortex.2013.03.001

Roelofs, A., **Piai, V.**, & Schriefers, H. (2013). Context effects and selective attention in picture naming and word reading: Competition versus response exclusion. *Language and Cognitive Processes*, *28*, 655-671. doi: 10.1080/01690965.2011.615663

Roelofs, A., **Piai, V.**, & Schriefers, H. (2013). Selection by competition in word production: Rejoinder to Janssen (2012). *Language and Cognitive Processes*, *28*, 679-683. doi: 10.1080/01690965.2013.770890

2012

Piai, V., Roelofs, A., & Schriefers, H. (2012). Distractor strength and selective attention in picture naming performance. *Memory & Cognition*, *40*, 614-627. doi: 10.3758/s13421-011-0171-3

Piai, V., Roelofs, A., & Van der Meij, R. (2012). Event-related potentials and oscillatory brain responses associated with semantic and Stroop-like interference effects in overt naming. *Brain Research*, *1450*, 87–101. doi: 10.1016/j.brainres.2012.02.050

2011

Piai, V., Roelofs, A., & Schriefers, H. (2011). Semantic interference in immediate and delayed naming and reading: Attention and task decisions. *Journal of Memory and Language*, *64*, 404-423. doi: 10.1016/j.jml.2011.01.004

Roelofs A., & **Piai, V.** (2011). Attention demands of spoken word planning: A review. *Frontiers in Psychology*, *2*:307. doi: 10.3389/fpsyg.2011.00307

Roelofs, A., **Piai, V.**, & Garrido Rodriguez, G. (2011). Attentional inhibition in bilingual naming performance: Evidence from delta-plot analyses. *Frontiers in Psychology*, *2*:184. doi: 10.3389/fpsyg.2011.00184

Roelofs, A., **Piai, V.**, & Schriefers, H. (2011). Selective attention and distractor frequency in naming performance: Comment on Dhooge and Hartsuiker (2010). *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *37*, 1032-1038. doi: 10.1037/a0023328

Book chapters

Satoer, D., & **Piai, V.** (2022). Speech and Language. In R. Kessels, E. van den Berg, R. Ponds, J. Spikman & M. van Zandvoort (Eds.), *Clinical Neuropsychology*. Boom.

Piai, V., & Borges, P. (in press). The electrophysiology of language production. In R. Hartsuiker & K. Strijkers (Eds.), *Cognitive processes of language production*. Psychology Press.

Piai, V., & Zheng, X. (2019). Speaking waves: neuronal oscillations in language production. *Psychology of Learning and Motivation*, *71*, 265-302. doi: 10.1016/bs.plm.2019.07.002

de Zubicaray, G., & **Piai, V.** (2019). Investigating the spatial and temporal components of speech production. In G. de Zubicaray, & N. O. Schiller (Eds.), *The Oxford Handbook of Neurolinguistics*. Oxford University Press. doi: 10.1093/oxfordhb/9780190672027.013.19

Flinker, A., **Piai, V.**, & Knight, R. T. (2018). Intracranial electrophysiology in language research. In S-A. Rueschemeyer, & M. G. Gaskell (Eds.), *The Oxford Handbook of Psycholinguistics*. Oxford University Press. doi: 10.1093/oxfordhb/9780198786825.013.43

Products

Released

"SimpTell", an application for the training of elliptical language production style by patients with chronic Broca's aphasia *(Co-developer, with main developer Marina Ruiter and co-developer Ardi Roelofs)*

Under development

"Syntest", a Dutch test for the comprehension of (complex) syntactic structures *(with Nikki Janssen)*
"Quest", for Quick ESTimation of language functioning in Dutch *(with Adrià Rofes)*
"TeleTaal", a telephone-based language assessment battery to assess patients with mild language disorders *(Co-developer, with Djaina Satoer and Elke De Witte)*

Invited Talks

The neural basis of language production as we speak. Science of Aphasia, Bordeaux, France. September, 2022. 2022

Speaking: evidence from electrophysiology and brain lesions. Special interest lecture at Donders MEG/EEG Toolkit, Radboud University, Nijmegen, the Netherlands. April, 2022.

Drawing inferences about word production in context. Neurobiology of Language: Key Issues and Ways Forward, MPI, Nijmegen, the Netherlands. April, 2021. 2021

Speaking: evidence from electrophysiology and brain lesions. Special interest lecture at Donders MEG/EEG Toolkit, Radboud University, Nijmegen, the Netherlands. April, 2021.

Conceptual and lexical retrieval in spoken word production. Research Colloquium at Department of Comparative Linguistics, University of Zurich. March, 2021.

Conceptual and lexical retrieval in spoken word production. IMPRS Conference 2020, Interdisciplinary Approaches in the Language Sciences, Nijmegen, the Netherlands. June, 2020. 2020

Memory and control in spoken word production: evidence from electrophysiology and brain lesions. Institute of Cognitive Neuroscience, University College London. February, 2020.

Neurale processen tijdens het spreken. Werkverband Amsterdamse Psycholinguïsten Symposium. Amsterdam, the Netherlands. January, 2020.

The effects of head and neck tumours on neurocognition before and after treatment. Autumn Conference of the Dutch Workgroup for Head and Neck Tumours. Maastricht, the Netherlands. October, 2019. 2019

Interfering and facilitating contexts in spoken word production. Brownbag Lab Seminars. University of Geneva, Switzerland. June, 2019.

Context effects in language production examined with electrophysiology. International Symposium on Neurobiology of Language. Waseda University, Tokyo, Japan. February, 2019.

Comprehending and producing words: scalp and intracranial electrophysiology. Satellite Seminar on Neurobiology of Language. Waseda University, Tokyo, Japan. February, 2019.

Context-driven word production through an electrophysiological lens. Queensland University of Technology, Brisbane, Australia. November, 2018. 2018

Language and speech functioning through an electrophysiological lens. CLaS-CCD Colloquium Series. Macquarie University. November, 2018.

Key considerations for EEG and language studies. School of Psychology and Clinical Language Sciences, University of Reading, UK. June, 2018.

Oscillations in language research. Summer Neurolinguistics School, National Research University Higher School of Economics, Moscow, Russia. May, 2018.

Neuropsychologie en de Psychologie van Taal. Nederlandse Vereniging voor Neuropsychologie Voorjaarsconferentie 2018. Utrecht, the Netherlands. April, 2018.

2017

Intracranial electrophysiology in language research. National Research University, Higher School of Economics, Moscow, Russia. November, 2017.

Taalverwerking in relatie tot geheugen: Van fundamenteel onderzoek naar klinische toepassing. Afasieconferentie "State of the Art 2017". Zeist, the Netherlands. October, 2017.

Language production and acquired language disorders. International Radboud Summer School, Introduction to Cognitive Neuroscience. Nijmegen, the Netherlands. August, 2017.

Oscillations as a bridge between language and other cognitive domains. International Symposium on Neural Oscillations in Speech and Language Processing. Harnack Haus of the Max Planck Society, Berlin, Germany. May, 2017.

2016

Context-driven word production. Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany. October, 2016.

Context-driven word production in the healthy and stroke populations. Introduction to International Max Planck Research School PhD students. Nijmegen, the Netherlands. September, 2016.

Language production and acquired language disorders. International Radboud Summer School, Introduction to Cognitive Neuroscience. Nijmegen, the Netherlands. August, 2016.

Electrophysiology measured over the scalp and intracranially: examples from context-driven word production. Summer School - Human Language: From Genes and Brains to Behaviour. Berg en Dal, the Netherlands. July, 2016.

Where language production meets memory (or how). Center for Mind and Brain, Davis, USA. February, 2016.

2011 and earlier

The N450 in picture-word interference tasks. Donders Discussion. Nijmegen, the Netherlands. October, 2011.

Comprehending particle verbs. Experimental Linguistics Talks Utrecht. Utrecht, the Netherlands. September, 2009.

Conference Presentations

Oral presentations only in the past 5 years. Asterisks indicate (PhD or undergraduate) student lead authors.

2022

*Kennis, N., Zheng, X., de Bruin, A., & **Piai, V.** *The electrophysiology of voluntary and cued*

language switching: Evidence from event related potentials and neuronal oscillations. IMPRS conference 2022. Nijmegen, the Netherlands. June, 2022.

2019

*Camerino, I. L., Sierpowska, J., Meyer, N. H., Tuladhar, A. M., Reid, A. T., Kessels, R. P. C., de Leeuw, F.-E., & **Piai, V.** *White-matter bottleneck in small vessel disease: A lesion-symptom mapping study of executive-language functions*. 20th International Science of Aphasia Conference. Rome, Italy. September, 2019.

Sierpowska, J., Bryant, K., Römkens, M., Mangnus, M., Janssen, N., Kessels, R., Roelofs, A., Mars, R., & **Piai, V.** *The functional neuroanatomy of the left temporal lobe white matter – an interdisciplinary approach based on intraoperative and comparative studies*. 20th International Science of Aphasia Conference. Rome, Italy. September, 2019.

Sierpowska, J., Rofes, A., Mandonnet, E., ter Laan, M., & **Piai, V.** *The AFTERCARE survey - The assessment and intervention survey for professionals working with individuals after brain surgery*. 14th European Low Grade Glioma Network Meeting. London, UK. June, 2019.

Piai, V. *Reconfiguration of the language network after brain damage*. Symposium "Cognitive Networks: Trends in Multimodal Approaches and Connectomics" at the 26th Annual Meeting of the Cognitive Neuroscience Society. San Francisco, USA. March, 2019.

Supervision

Postdoctoral researchers

Britta Westner, *Radboud University* — 2022-present

Joanna Sierpowska, *Radboud University* — 2018-2021

Jana Klaus, *Radboud University* — 2017-2018

PhD Candidates

Irina Chupina, *Radboud University* — 2022-present

Rosemarije Weterings, *Radboud University* — 2021-present

Imke Wets, with prof. Helen de Hoop, dr. Marina Ruiter and dr. Lotte Hogeweg, *Radboud University*

Natascha Roos, *Radboud University* — 2019-present

Yang Cao, *Radboud University*

Sümeyye Sezer, with dr. Mark ter Laan, *Radboud University*

Matteo Mascelloni, with prof. Greig de Zubicaray, *Queensland University of Technology*, Australia — 2018-present

Adrian Jodzio, with prof. Peter Indefrey, *Radboud University*

João Ferreira, with prof. Ardi Roelofs, *Radboud University* — 2017-present

Arushi Garg, with prof. Ardi Roelofs and prof. James McQueen, *Radboud University* — 2016-present

Ileana Camerino, *Radboud University*, 2022 — Graduated

Nikki Janssen, with prof. Ardi Roelofs and prof. Roy Kessels, *Radboud University*, 2020

Lara Todorova, with dr. David Neville, *Radboud University*, 2020

Master's Students

I am an associated partner of the Erasmus+ Mundus Joint Master Degree programme in Clinical Linguistics

Main supervision: thesis
Co-supervision (by graduate students or post-docs in my group) is indicated

Adán Gracia-Gonzalez, *Radboud University* | Kai Koster, *Radboud University* | Kirstin Bleumink, *Radboud University* | Yunzhi Luo, *Radboud University* | Jiachen Yao, *Radboud University* (with dr. Ashley Lewis)	2022-2023
Nikita Boers, *Radboud University* (with Natascha Roos) | Nora Kennis, *Radboud University* (with dr. Xiaochen Zheng and dr. Angela de Bruin) | Owen Kapelle, *University of Groningen* (with dr. Rinus Verdonschot)	2021-2022
Pauline van Barschot, *Radboud University* | Rosemarije Weterings, *European Master in Clinical Linguistics* (with Joao Ferreira) | Seniz Canıbek, *Radboud University* | Leonie de Regt, *Radboud University*	2020-2021
Priscila Borges, *European Master in Clinical Linguistics* | Irina Chupina, *European Master in Clinical Linguistics* | Christina Papoutsi, *Utrecht University* | Imke Wets, *Radboud University*	2020
Cecília Hustá, *University of Groningen* (with dr. Xiaochen Zheng)	2019
Anna Dewenter, *Radboud University* (with dr. Joanna Sierpowska)	2018-2019
Laura ten Dijke, *University of Amsterdam* | Karleen van Dijk, *Radboud University*	2018
Elena Rossetto, *University of Trento* (with dr. Jana Klaus) | Natascha Roos, *Radboud University* | Rosanne Abrahamse, *Radboud University*	2017-2018
Manon Jacobs, *Radboud University* (with Nikki Janssen) | Tessa Ruijs, *University of Amsterdam*	2017

Co-supervision: thesis
My role is secondary

Hajira Mumtaz, *European Master in Clinical Linguistics* (with dr. Willemijn Doedens)	2021
Giulio Severijnen, *Radboud University* (with prof. James McQueen)	2019-2020
Margot Magnus, *Radboud University* (with Nikki Janssen)	2018-2019
Manon Hendriks, *Radboud University* (with prof. Ton Dijkstra)	2017-2018
Svetlana Gerakakis, *Radboud University* (with prof. Ardi Roelofs)	2010-2011
Gabriela Garrido Rodriguez, *Radboud University* (with prof. Ardi Roelofs)	2009-2010

Internship
Co-supervision by graduate students or post-docs in my group is indicated

Ali Lotfi, *Radboud University* (with Yang Cao)	2022

Lydia Huang, *Radboud University* (with Yang Cao) | Dilys Eikelboom, *Radboud University* (with Adrian Jodzio) | Sevilay Tokgöz, *Radboud University* (with Anna Dewenter) 2021

Juliette Vertregt, *University of Groningen* 2020

Anne Billot, *Pierre-and-Marie-Curie University, France* | Nathalie Meyer, *École Polytechnique Fédérale de Lausanne, Switzerland* 2017

Bachelor's Students

Honours thesis

Laurie Marsman, *Radboud University* (with dr. Giesje Nefs) | Joran Muller, *Radboud University* 2019-2020

Tamar Ardesch, *Radboud University* (with Anna Dewenter) 2018-2019

Rosemarije Weterings, *Radboud University* (with dr. Marina Ruiter) 2017-2018

Thesis

Mirthe van Dijk, *University of Amsterdam* | Adán Gracia, *University of Amsterdam* | Julia Chauvet, *University of Amsterdam* (with Natascha Roos) 2020-2021

Sjoerd van Erp, *Radboud University* (with Ileana Camerino and Joao Ferreira) 2020

Ingeborg Roete, *Radboud University* 2012

Internship

Fleur Hartskeerl, *Radboud University* 2021

Teaching

Research Master's Programme in Cognitive Neuroscience, Radboud University

Coordinator for "Neurobiology of Language" (2020-present); Lecturer for "Cognitive Neuroscience of Memory" (2017-2018), "Trends in Cognitive Sciences" (2018-present), "Neurobiology of Language" (2019-present) 2017-present

Bachelor's Programme in Psychology, Radboud University

Lecturer for "Brain and Cognition" (2017-present), "Applied Research Methods" (2020-present), Co-coordinator for "Language and Communication" (2019-present) 2017-present

Instructor for "Health Psychology", "Introduction to Brain Studies", "Introduction to General Psychology", "Theoretical Psychology" Lecturer for "Applied Research Methods in Brain Studies" 2010-2013

Media and Outreach

Print

De Volkskrant | Algemeen Dagblad | The Asha Leader | The Daily Californian | Donders_Newsletter

Radio and podcast

BNR nieuwsradio | Mindtrace Podcast: The SCIENCE of language | Science Today on CBS Radio News

Online	Nemo Kennislink 1 | Nemo Kennislink 2 | Nemo Kennislink 3 | Nemo Kennislink 4 California Magazine | M.D./Alert | Quartz | NWO | ZME_Science | Science Alert | Fanpage.it	
Outreach	Article contribution to O2, the magazine of the Dutch Association for Physiotherapy within Lymphology and Oncology (NVFL)	2020
	Radio interview: Relatie Brein En Taal, *GL8 Media*	2018
	Public talk: Hoe werkt ons taalsysteem? Over de relatie tussen taal en hersenen, *Loop- en Ontmoetingscentrum, Molenhoek*	
	Laureate presentation at Rubicon information meeting, *Radboud University, Nijmegen*	2017
	Interview and demo to high school students (Profielwerkstuk)	2016-2017
	Co-facilitator for Aphasia Stroke Support Group, *Veterans Affairs Hospital, Martinez, California, USA*	2014-2016
	Team member for De Jonge Akademie on Wheels, *Openbaar Zeister Lyceum, Zeist*	2008

Professional Activities

Doctoral Examination Board	Mansoureh Fahimi Hnazaee, *KU Leuven, Belgium* Amie Fairs, *Radboud University, Nijmegen* Ana Murteira, *Macquarie University, Sydney, Australia*	2019-present
PhD Opposition	*Radboud University, Nijmegen* Flora Vanlangendonck | Natalia Shitova | Ashley Lewis | Jim Herring | Xiaochen Zheng | Greta Kaufeld | Kristijan Armeni | Karen Dijkstra | Federica Bartolozzi *Other universities* Guilia Krethlow, University of Geneva	2017-present
Recruiting Committees	*Radboud University*, *Max Planck Institute for Psycholinguistics*	2016-present
Ad-hoc Reviewer	See my Publons profile for details BMC Psychology; Brain; Brain and Development; Brain and Language; Brain Topography; Cerebral Cortex; Cognition; Collabra; Cortex; Emotion; Frontiers in Human Neuroscience; Frontiers in Language Sciences; Human Brain Mapping; Journal of Cognitive Neuroscience; Journal of Experiment Psychology: General; Journal of Experimental Psychology: Human Perception and Performance; Journal of Experimental Psychology: Learning, Memory, and Cognition; Journal of the International Neuropsychological Society; Journal of Neurolinguistics; Journal of Neuroscience; Language and Speech; Language, Cognition and Neuroscience; Nature Communications;	2012-present

NeuroImage; Neuropsychologia; PLoS ONE; Proceedings of the National Academy of Sciences; Psychonomic Bulletin & Review; Quarterly Journal of Experimental Psychology

Guest lectures

The role of the psychologist in awake brain mapping. Lectures organised by Vakdispuut Brainwave. *Utrecht University, the Netherlands* 2021, 2022

Language testing during awake brain surgery (and beyond). *University of Groningen, the Netherlands* 2020-present

Producing words: The eletrophysiology of memory and motor aspects of speaking. *University of Sao Paulo, Brazil* 2019, 2022

Organisation

Tutor for FieldTrip Toolkit, *Nijmegen, the Netherlands* 2019-present

Research committee member, *Department of Medical Psychology, Radboudumc, Nijmegen* 2016-present

Co-organiser of Psycholinguistics in Flanders Meeting, *Nijmegen, the Netherlands* 2012

Organiser of the Language Division Meetings, *Donders Centre for Cognition* 2010-2013

Last updated: March 2023