

Vitória Piai

v.piai.research@gmail.com - www.vitoriapiai.com

Radboud University
Donders Centre for Cognition
Montessorilaan 3 , B.02.27
6525HR Nijmegen
+31.24.3615497

Date of Birth: August 25th, 1982
Nationalities: Brazilian, Italian

Positions

Senior Researcher <i>Radboud University, Donders Centre for Cognition & Radboud University Medical Centre, Medical Psychology, Nijmegen</i>	2016-present
Postdoctoral Fellow <i>University of California, Berkeley Center for Aphasia and Related Disorders, Veterans Affairs Health Care System Northern, Martinez, California</i> Advisors: Prof. Robert T. Knight, Prof. Nina F. Dronkers	2014-2016
Neurosurgery Department Affiliate <i>University of California, San Francisco</i>	2015-2016

Education

PhD in Cognitive Neuroscience (Highest distinction) <i>Radboud University, Graduate School for Cognitive Neuroscience & International Max Planck Research School for Language Sciences</i>	2009-2013
MSc in Cognitive Neuroscience <i>Radboud University</i>	2007-2009
BA in Linguistics <i>Utrecht University</i>	2004-2007
BA in Portuguese Language and Culture <i>Utrecht University</i>	2004-2007

Grants and Awards

Rubicon <i>Netherlands Organisation for Scientific Research</i> Towards a neural mechanism of context-driven memory access in language: prefrontal cortex and neuronal oscillations	2014-2016
Niels Stensen (Declined due to Rubicon) Towards a neuronal mechanism of context-dependent memory access in spoken word production	2014-2015

Frye Stipendium	2012
<i>Radboud University</i>	
Awarded to ten most promising female researchers	
Poster Prize	2011
<i>2nd IMPRS NeuroCom Summer School. London, UK.</i>	
Electrophysiological evidence for a common lexical locus of semantic and Stroop-like interference effects in overt naming performance.	

**Research
Experience**

University of California, Berkeley	2014-2016
<i>Advisors: Prof. Robert T. Knight, Prof. Nina F. Dronkers</i>	
Research on brain organisation in relation to language and memory	
<ul style="list-style-type: none"> - Methods: Intracranial EEG, Scalp EEG, MEG, eye-tracking - Patient populations: stroke, brain tumour, epilepsy 	
Radboud University Nijmegen	2009-2013
<i>Advisors: Prof. Herbert Schriefers, Prof. Ardi Roelofs</i>	
PhD research on the role of executive functioning in word production	
<ul style="list-style-type: none"> - Methods: Scalp EEG, MEG, fMRI 	
Radboud University Nijmegen	2007-2009
<i>Advisors: Prof. Robert Schreuder, Dr. Marcel C. M. Bastiaansen</i>	
MSc research on particle-verb processing during comprehension	
<ul style="list-style-type: none"> - Method: Scalp EEG 	
Radboud University Nijmegen, Donders Centre for Cognition	2009
<i>Research Assistant, Prof. Herbert Schriefers, Prof. Ardi Roelofs</i>	
<ul style="list-style-type: none"> - Running experiments, analysing behavioural data on word production 	
Max Planck Institute for Psycholinguistics	2007-2009
<i>Research Assistant, Prof. Mirjam Ernestus</i>	
<ul style="list-style-type: none"> - Running experiments, analysing spontaneous speech 	
Utrecht University	2005-2006
<i>Research Assistant, Prof. Paulo de Medeiros</i>	
<ul style="list-style-type: none"> - Database management 	

Skills

Research Methods

- MEG, scalp and intracranial EEG, fMRI, eye-tracking, electromyogram
- Temporal and spectral analysis of electrophysiological signals
- Temporal and spectral analysis of (spontaneous) speech

Software

Matlab, FieldTrip, Brain Vision Analyzer, MNE, SPM8, Freesurfer, MRICro, MRICron, R, SPSS, AWK, E-prime, Presentation, Praat, Linux

Languages

Portuguese (native), English (near native), Dutch (near native), Swedish (excellent), French (very good), Italian (very good), Spanish (very good), Polish (intermediate)

Peer-Reviewed Publications

Piai, V., & Knight, R.T. (in press). Lexical selection with competing distractors: Evidence from left temporal lobe lesions. *Psychonomic Bulletin & Review*.

Piai, V., Meyer, L., Dronkers, N.F., & Knight, R.T. (in press). Neuroplasticity of language in left-hemisphere stroke: subsecond electrophysiology and structural connections. *Human Brain Mapping*.

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

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.

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.

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

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.

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

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

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.

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.

Piai, V., Roelofs, A., & Schriefers, H. (2015). Task choice and semantic interference in picture naming. *Acta Psychologica*, *157*, 13-22.

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

Piai, V., Dahlslett, 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.

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

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.

- 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.
- Piai, V.,** Roelofs, A., & Maris, E. (2014). Oscillatory brain responses in spoken word production reflect lexical frequency and sentential constraint. *Neuropsychologia*, *53*, 146-156.
- 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.
- 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.
- Piai, V.** & Roelofs, A. (2013). Working memory capacity and dual-task interference in picture naming. *Acta Psychologica*, *142*, 332-342.
- Roelofs, A., & **Piai, V.** (2013). Associative Facilitation in the Stroop Task: Comment on Mahon et al. (2012). *Cortex*, *49*, 1767-1769.
- 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.
- Roelofs, A., **Piai, V.,** & Schriefers, H. (2013). Selection by Competition in Word Production: Rejoinder to Janssen (2012). *Language and Cognitive Processes*, *28*, 679-683.
- Piai, V.,** Roelofs, A., & Schriefers, H. (2012). Distractor strength and selective attention in picture naming performance. *Memory & Cognition*, *40*, 614-627.
- 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.
- 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.
- Roelofs A., & **Piai, V.** (2011). Attention demands of spoken word planning: A review. *Frontiers in Psychology*, *2*:307.
- Roelofs, A., **Piai, V.,** & Garrido Rodriguez, G. (2011). Attentional inhibition in bilingual naming performance: Evidence from delta-plot analyses. *Frontiers in Psychology*, *2*, 184.
- 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.

Work in Progress

- Piai, V.,** Rommers, J., & Knight, R.T. (in prep). Evidence for a causal link between left posterior alpha-beta power decreases and context-driven word production.

Talks and Posters

- Piai, V.**, Meyer, L., Dronkers, N.F., & Knight, R.T. [talk]. Neuroplasticity of language in left-hemisphere stroke: evidence linking subsecond electrophysiology and structural connectivity. 54th Annual Meeting of the Academy of Aphasia. October, 2016. Llandudno, Wales.
- Piai, V.**, Meyer, L., Dronkers, N.F., & Knight, R.T. [poster]. Neuroplasticity of language in left-hemisphere stroke: evidence linking subsecond electrophysiology and structural connectivity. Eighth Annual Meeting of the Society for the Neurobiology of Language. August, 2016. London, UK.
- Piai, V.**, Dronkers, N.F., & Knight, R.T. [poster]. Priming and competition of associated memory representations: A comparison between response times and event-related potentials following lesions to left temporal cortex. 53rd Annual Meeting of the Academy of Aphasia. Tucson, Arizona. October, 2015.
- Piai, V.**, Riès, S.K., & Swick, D. [poster]. Lesions to lateral prefrontal cortex impair control over response selection in word production. Seventh Annual Meeting of the Society for the Neurobiology of Language. Chicago, USA. October, 2015.
- Piai, V.**, Anderson, K.L., Lin, J.J., Dronkers, N.F., & Knight, R.T. [poster] Context-driven word retrieval is reflected in hippocampal theta oscillations. Organization for Human Brain Mapping Annual Meeting. Hawaii, USA. June 2015.
- Piai, V.**, Roelofs, A., Rommers, J., & Maris, E. [poster] Beta oscillations reflect memory and motor aspects of spoken word production. 22nd Annual Meeting of the Cognitive Neuroscience Society. San Francisco, USA. March, 2015.
- Piai, V.**, Roelofs, A., Rommers, J. & Maris, E. [poster] Planning of word production but not predicting in comprehension engages the cortical network for language production. 55th Annual Meeting of the Psychonomic Society. Long Beach, USA. November, 2014.
- Mulatti, C., **Piai, V.** & Job, R. [poster] Picture and word processing streams compete for limited resources in picture-word interference. Long Beach, USA. November, 2014.
- Piai, V.**, Roelofs, A., Rommers, J. & Maris, E. [poster] Beta-band desynchronisation in the language production network during spoken word planning. 8th International Workshop on Language Production. Geneva, Switzerland. July, 2014.
- Piai, V.**, Roelofs, A., Acheson, D., & Takashima, A. [poster] Attention for speaking: Domain-general control from anterior cingulate cortex in spoken word production. Society for the Neurobiology of Language. San Diego, USA. November, 2013.
- Piai, V.**, Roelofs, A., Jensen, O., Schoffelen, J.M., & Bonnefond, M. [poster] Distinct patterns of brain activity characterize lexical activation and competition in speech production. 20th Annual Meeting of the Cognitive Neuroscience Society. San Francisco, USA. April, 2013.
- Piai, V.**, Roelofs, A., Jensen, O., Schoffelen, J.M., & Bonnefond, M. [talk] Cortical dynamics of spreading activation and lexical competition during picture naming: An MEG study. 18th Annual Conference on Architectures and Mechanisms for Language Processing, Riva del Garda, Italy. September, 2012.
- Piai, V.**, Roelofs, A., Jensen, O., Schoffelen, J.M., & Bonnefond, M. [poster] Cortical dynamics of spreading activation and lexical competition during picture naming: An MEG study. 7th International Workshop on Language Production. New York, USA. July, 2012.
- Piai, V.**, Roelofs, A., Jensen, O., Schoffelen, J.M., & Bonnefond, M. [talk] Oscillatory activity in left inferior frontal gyrus during interference in overt picture naming: An MEG study. Psycholinguistics in Flanders. Nijmegen, the Netherlands. June, 2012.

- Piai, V.,** Roelofs, A., & Van der Meij, R. [poster] Electrophysiological evidence for a common lexical locus of semantic and Stroop-like interference effects in overt naming performance. 13th Winter Conference of the Dutch Psychonomic Society. Egmond aan Zee, the Netherlands. December, 2011.
- Piai, V.,** Roelofs, A., & Van der Meij, R. [poster] Electrophysiological evidence for a common lexical locus of semantic and Stroop-like interference effects in overt naming performance. 2nd IMPRS NeuroCom Summer School, London, UK. July, 2011. Prize winning poster.
- Piai, V.,** Roelofs, A., & Van der Meij, R. [talk] Electrophysiological evidence for a common lexical locus of semantic and Stroop-like interference effects in overt naming performance. 10th International Symposium of Psycholinguistics, San Sebastián, Spain. April, 2011.
- Piai, V.,** Roelofs, A., & Schriefers, H. [talk] Attention, distractor strength, and semantic effects in object naming performance: Insights from response time distributional analyses. 16th Annual Conference on Architectures and Mechanisms for Language Processing, York, UK. September, 2010.
- Piai, V.,** Roelofs, A., & Schriefers, H. [poster] Semantic interference in immediate and delayed word production: Role of attentional control. 6th International Workshop on Language Production. Edinburgh, UK. September, 2010.
- Piai, V.,** Roelofs, A., & Schriefers, H. [talk] Semantic interference in immediate and delayed word production: Role of attentional control. Psycholinguistics in Flanders, Ghent, Belgium. May, 2010.
- Piai, V.,** Roelofs, A., & Schriefers, H. [talk] Still semantic interference with distractor masking. Presentation to the Workshop on Competition Effects in Language Production, Nijmegen, the Netherlands. March, 2010.
- Piai, V.,** Roelofs, A., & Schriefers, H. [talk] No semantic interference in delayed naming. Presentation to the Workshop on Competition Effects in Language Production, Nijmegen, the Netherlands. March, 2010.
- Piai, V.,** Bastiaansen, M., & Schreuder, R. [talk] Comprehending Particle Verbs: an EEG approach. 30th TABU Dag. The Netherlands, 2009.
- Piai, V.** & Kuperman, V. [talk] Visual processing of Dutch Phrasal Verbs: An Experimental Approach. Presentation to the Dutch Linguistic Society, Utrecht, the Netherlands. February, 2008.

Invited Talks

- What electrophysiology can teach us about language production and neuroplasticity. Psychology Institute, Humboldt-Universität, Berlin, Germany. 2017.
- Context-driven word production: Cortical and hippocampal oscillatory signatures and neuroplasticity. International Symposium on Neural Oscillations in Speech and Language Processing. Harnack Haus of the Max Planck Society, Berlin, Germany. 2017.
- 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. Radboud Summer School. 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.

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.

Teaching and Supervision

Undergraduate and Graduate Programme in Neuroscience <i>University of California, Berkeley</i> Co-supervisor for thesis of PhD students and Honors undergraduate student; supervision of undergraduate students	2014-present
Bachelor's Programme in Psychology <i>Radboud University Nijmegen</i> Instructor for Applied Research Methods in Brain Studies, Health Psychology, Introduction to Brain Studies, Introduction to General Psychology, Theoretical Psychology	2010-2013
Bachelor's Programme in Artificial Intelligence <i>Radboud University Nijmegen</i> Supervisor for Bachelor's student's thesis	2012-2013
Research Master's Programme Cognitive Neuroscience <i>Radboud University Nijmegen</i> Co-supervisor for Master's students' theses	2009-2011

Professional Activities

Co-facilitator for Aphasia Stroke Support Group <i>Veterans Affairs Hospital, Martinez, California</i>	2014-present
Organiser of the Language Division Meetings <i>Radboud University Nijmegen, Donders Centre for Cognition</i>	2010-2013
Co-organiser of Psycholinguistics in Flanders Meeting <i>Nijmegen, the Netherlands</i>	2012
Ad-hoc Reviewer BMC Psychology; Brain and Language; Brain Topography; Cerebral Cortex; Cognition; Emotion; Frontiers in Human Neuroscience; Frontiers in Language Sciences; Human Brain Mapping; Journal of Experimental Psychology: Learning, Memory, and Cognition; Journal of Neurolinguistics; Language and Cognitive Processes; Language, Cognition and Neuroscience; PLoS ONE; PNAS; Psychonomic Bulletin and Review; Quarterly Journal of Experimental Psychology	2012-present

Other Professional Experience

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| Language Instructor for Portuguese, Dutch and English
<i>'s-Hertogenbosch, Utrecht, Nijmegen, the Netherlands</i> | 2002-2012 |
| Language Instructor for Portuguese and English
<i>Stoffels Talen, Nijmegen; Eurolinguist, Nijmegen; Talent Talen, Utrecht; Bogaers Taleninstituut, Tilburg, the Netherlands</i> | 2004-2007 |
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Volunteer Activities

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| Supervisor for “Adolescents in Discovering Science” Programme
<i>De Jonge Akademie On Wheels, the Netherlands</i> | 2008 |
| Translator for Dutch and Portuguese
<i>Liliane Fonds, 's-Hertogenbosch, the Netherlands</i> | 2004-2007 |
| Aide for mentally and physically disabled
<i>MEE, 's-Hertogenbosch, the Netherlands</i> | 2001-2003 |
| Music teacher for low-income Brazilian children
<i>Gotas de Flor com Amor, São Paulo, Brazil</i> | 1997-1999 |
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Certificates

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| Dutch University Teaching Qualification
<i>Radboud University Nijmegen</i>
Proof of didactic competence for lecturers in academic education | 2013 |
| Certificate of Proficiency in Italian
<i>Italian Institute of Culture, Amsterdam, the Netherlands</i> | 2004 |
| Certificate of Proficiency in Dutch (NT2.2)
<i>Tilburg, the Netherlands</i> | 2002 |
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