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EDUCATION

- **Stanford University, USA** — ***2018 – present***
  Postdoctoral scholar
  Sponsor: Josef Parvizi

- **Sorbonne University, France** — ***2013 – 2017***
  Ph.D., Cognitive Neuroscience
  Characterizing the neurocognitive mechanisms of arithmetic
  Supervisor: Stanislas Dehaene
  Co-supervisor: Manuela Piazza (University of Trento, Italy)

- **Federal University of Minas Gerais, Brazil** — ***2010, 2012***
  B.A., Psychology; M.S., Neuroscience

PUBLICATIONS

- **Pinheiro-Chagas, P.**, Piazza, M., Dehaene, S. (2019). Decoding the processing stages of mental arithmetic with magnetoencephalography. *Cortex*, S0010-9452(18)30235-1.

- Borghesani*, V., de Hevia*, L., Viarouge*, A., **Pinheiro-Chagas, P.**, Eger, E., Piazza, M. (2019). Processing number and length in the parietal cortex: sharing resources, not a common code. *Cortex*, S0010-9452(18)30234-X.

- Dinino, D., **Pinheiro-Chagas, P.**, Wood, G., Knops, A. (2019) Response: Commentary on: Pinheiro-Chagas, P., Didino, D., Haase, VG, Wood, G., & Knops, A.(2018). The developmental trajectory of the operational momentum effect. *Frontiers in Psychology*, 10, 160.

- **Pinheiro-Chagas, P.***, Daitch, A.*, Parvizi, J., Dehaene, S. (2018). Brain mechanisms of arithmetic: a crucial role for ventral temporal cortex. *Journal of Cognitive Neuroscience*, 31:1-16.

- Baek, S., Daitch, A., **Pinheiro-Chagas, P.**, Parvizi, J. (2018). Neuronal population responses in the human ventral temporal and lateral parietal cortex during arithmetic processing with digits and number words. *Journal of Cognitive Neuroscience*, 30(9):1315-1322.

- **Pinheiro-Chagas, P.***, Dinino, D.*, Haase, V. G., Wood, G., Knops, A. (2018) The developmental trajectory of the operational momentum effect. *Frontiers in Psychology*, 9, 1062.

- Dresler, T., Bugden, S., Gouet, C., Lallier, M., Oliveira, D., **Pinheiro-Chagas, P.**, Pires, A., Wang, Y., Zugarramurdi, C., Weissheimer, J. (*2018*). Translational research in learning disabilities: the place of neuroimaging. *Frontiers in Integrative Neuroscience*, 12, 25.

- **Pinheiro-Chagas, P.,** Dotan, D., Piazza, M., Dehaene, S. (*2017*). Finger tracking reveals the covert stages of mental arithmetic. *Open Mind: Discoveries in Cognitive Science,* 1(1), 30-41.

- Borghesani*, V., de Hevia*, L., Viarouge*, A., **Pinheiro-Chagas, P.**, Eger, E., & Piazza, M. (2016). Comparing magnitudes across dimensions: a univariate and multivariate approach. International Workshop on Pattern Recognition in Neuroimaging, 1-4.

- **Pinheiro-Chagas, P.** Wood, G., Knops, A., Krinzinger, H., Lonnemann, J., Starling-Alves, I., Willmes, K., Haase, V. G. (2014). In how many ways is the approximate number system associated with exact calculation? *PLoS One*, 19, 9(11), e111155.

- Carvalho, M. R., Vianna, G., Oliveira, L., Costa, A. J., **Pinheiro-Chagas, P.**, Sturzenecker, R., Zen, P. R., Rosa, R. F., de Aguiar, M. J., Haase, V. G. (2014). Are 22q11.2 distal deletions associated with math difficulties? *American Journal of Medical Genetics Part A*, 164A(9), 2256-62.

- Haase, V. G., Júlio-Costa, A., Lopes-Silva, J. B., Starling-Alves, I., Antunes, A. M., **Pinheiro-Chagas, P.**, Wood, G. (2014). Contributions from specific and general factors to unique deficits: two cases of mathematics learning difficulties. *Frontiers in Psychology*, 13, 5-102.

- Moura, R., Wood, G., **Pinheiro-Chagas, P.**, Lonnemann, J., Krinzinger, H., Willmes, K., Haase, V. G. (2014). Transcoding abilities in typical and atypical mathematics achievers: the role of working memory and procedural and lexical competencies. *Journal of Experimental Child Psychology*, 116(3), 707-27

- Ferreira, F. O., Costa, D. S., Micheli, L. R., Oliveira, L. F., **Pinheiro-Chagas, P.**, Haase, V. G. (2012). Educational Achievement Test: Normative data for a representative sample of elementary school children. *Psychology & Neuroscience,* 5(2), 157-164.

- Wood, G., **Pinheiro-Chagas, P.**, Júlio-Costa, A., Micheli, L. R., Krinzinger, H., Kaufmann, L., Willmes, K., Haase, V. G. (2012). Math anxiety in elementary school children: cross-cultural comparison between Germany and Brazil. *Child Development Research, 1-10.*

- Haase, V. G., Júlio-Costa, A., **Pinheiro-Chagas, P.**, Oliveira, L. F., Micheli, L. R., Wood, G. (2012). Math Self-assessment, but not Negative Feelings, predicts Mathematics Performance of Elementary School Children. *Child Development Research, 1-10.*

- Ferreira, F. O., **Pinheiro-Chagas, P.**, Wood, G., Lohnemann, J., Krinzinger, H., Willmes, K., Haase, V. G. (2012). Explaining arithmetic performance from symbolic and nonsymbolic magnitude processing: differences and similarities between typical and low achieving children. *Psychology & Neuroscience*, 5(1), 37-46.

- Costa, A. J., Silva, J. B. L., **Pinheiro-Chagas, P.**, Krinzinger, H., Lohnemann, J., Willmes, K., Wood, G., Haase, V. G. (2011). A hand full of numbers: a role for offloading in arithmetics learning? *Frontiers in Psychology*, 12;2:368.

<u>Papers under revision or in preparation:</u>

- **Pinheiro-Chagas, P.**, Dotan, D., Piazza, M., Dehaene, S. (*in preparation*). Decomposing the syntactic structure of arithmetic expressions.

- Dotan, D., **Pinheiro-Chagas, P.**, Al-Roumi, F., Dehaene, S. (*in preparation*) Track it to crack it: revealing the succession of processing stages with pointing trajectories.

* The authors equally contributed to the work

INVITED TALKS

- **Pinheiro-Chagas, P.** (2019). Modulating visuospatial attention with electrical brain stimulation. Conte Center for Active Sensing retreat, Columbia University, NYC. 05/14/2019.

- **Pinheiro-Chagas, P.** (2019). Tracking the Neurocognitive Mechanisms of Arithmetic at the Knight Lab - UC Berkeley. 06/06/2019.

- **Pinheiro-Chagas, P.** (2019). Tracking the Neurocognitive Mechanisms of Arithmetic. Jay McClelland's Lab - Stanford University. 04/23/2019.

- **Pinheiro-Chagas, P.** (2016). Finger tracking reveals the covert stages of mental arithmetic. Laboratory of behavioral and cognitive neuroscience, Stanford University, USA. 07/17/2016.

- **Pinheiro-Chagas, P.** (2012). The approximate number system and arithmetic achievement. Cognitive Neuroscience Sector, SISSA - International School for Advanced Studies, Trieste, Italy. 07/16/2012.

- **Pinheiro-Chagas, P.** (2011). Developmental dyscalculia in school aged children: population screening and characterization of cognitive and genetic molecular aspects. Section Neuropsychology, Department of Neurology, RWTH Aachen University, Aachen, Germany. 02/18/2011.

CONFERENCE TALKS

- **Pinheiro-Chagas, P.** (2018) Brain mechanisms of arithmetic: a crucial role for ventral temporal cortex. 41st European Conference on Visual Perception, August 26-30th 2018, Trieste, Italy.

- **Pinheiro-Chagas, P.,** (2018). Tracking the neurocognitive mechanisms of arithmetic. In: 7th LASchool for Education Cognitive and Neural Sciences, James S. McDonnell Foundation, Chile.

- **Pinheiro-Chagas, P.,** (2017). Brain mechanisms of the arithmetic problem-size effect: a crucial role for ventral temporal cortex. In: The Neuroscience Workshop Saclay, Paris-Saclay, France.

- **Pinheiro-Chagas, P.,** (2017). Electrocorticography reveals the neurocognitive mechanisms the arithmetic problem-size effect. In: Data Blitz session of the Annual Meeting of The Cognitive Neuroscience Society (CNS). San Francisco, USA.

- **Pinheiro-Chagas, P.** (2014). Finger trajectories reveal serial processing stages during simple arithmetic. In: 4th LASchool for Education Cognitive and Neural Sciences, James S. McDonnell Foundation, Punta del Leste, Uruguay.

- **Pinheiro-Chagas, P.** (2014). The neurocognitive mechanisms of mental calculations. In: 3rd DSV PhD Students Meeting, Porquerolles, France.

POSTER PRESENTATIONS

- **Pinheiro-Chagas, P.*,** Daitch, A.*, Parvizi, J., Dehaene, S. (2017). Electrocorticography reveals the neurocognitive mechanisms the arithmetic problem-size effect. In: Annual Meeting of The Cognitive Neuroscience Society (CNS). San Francisco, USA.

- **Pinheiro-Chagas, P.,** Dotan, D., Piazza, M., Dehaene, S. (*2016*). Finger tracking reveals the covert stages of mental arithmetic. In: Rovereto Workshop Concepts Actions Objects (CAOS), Rovereto, Italy.

- **Pinheiro-Chagas, P.**, Dotan, D., Piazza, M., Dehaene, S. (2015). **The neurocognitive mechanisms of arithmetic**. In: 5th LASchool for Education Cognitive and Neural Sciences, James S. McDonnell Foundation, San Pedro de Atacama, Chile.

- Haase, V. G., Júlio-Costa, A., Lopes-Silva, J., Starling-Alves, I., **Pinheiro-Chagas, P.**, Wood, G. (2013). Impaired phonological processing and nonsymbolic number representations double-dissociate in two cases of developmental dyscalculia. In: 31th European Workshop on Cognitive Neuropsychology, Bressanone, Italy.

- **Pinheiro-Chagas, P.**, Wood, G., Knops, A., Lohnemann, J., Krinzinger, H., Willmes, K., Starling-Alves, I., Haase, V. G. (2013). Different instantiations of the approximate number system are hierarchically associated with mathematics achievement. In: 31th European Workshop on Cognitive Neuropsychology, Bressanone, taly.

- **Pinheiro-Chagas, P.**, Knops, A., Lohnemann, J., Krinzinger, H., Willmes, K., Haase, V. G., Wood, G. (2012). In how many ways does the approximate number system determine arithmetic achievement? The contributions of non-symbolic comparison, magnitude estimation and approximate calculation. In: 30th European Workshop on Cognitive Neuropsychology, Bressanone, Italy.

- Moura, R. J., Wood, G., **Pinheiro-Chagas, P.**, Krinzinger, H., Willmes, K., Haase, V. G. (2012). Number transcoding abilities in typical and atypical mathematical achievers: the role syntactical complexity and development. In: 30th European Workshop on Cognitive Neuropsychology, Bressanone, Italy.

- Costa, A. J., Silva, J. B. L., **Pinheiro-Chagas, P.**, Krinzinger, H., Lohnemann, J., Willmes, K., Wood, G., Haase, V. G. (2012). A hand full of numbers: a role for offloading in arithmetics learning? In: 30th European Workshop on Cognitive Neuropsychology, Bressanone, Italy.

- **Pinheiro-Chagas P.**, Ferreira, F. O., Wood, G., Lohnemann, J., Krinzinger, H., Willmes, K., Haase, V. G. (2011). The acuity of the nonsymbolic representation of numbers is impaired in children with mathematics learning difficulties. In: 29th European Workshop on Cognitive Neuropsychology, Bressanone, Italy.

- Ferreira, F. O., **Pinheiro-Chagas, P.**, Arantes, E. A., Mata, F. G., Silva, J. B. L., Haase, V. G. (2008). Lexical and Visuospatial Processing in Brazilian Children with Cerebral Palsy: A Pilot Study In: 26th European Workshop on Cognitive Neuropsychology, Bressanone, Italy.

AWARDS

- **7nd LASchool for Education Cognitive and Neural Sciences, Chile** ***2018***
  Fellowship award granted by James S. McDonnell Foundation, USA

- **Program Science Without Borders** ***2013 – 2017***
  Full Ph.D. scholarship
  National Counsel of Technological and Scientific Development (CNPq), Brazil

- **2016 Kavli Summer Institute in Cognitive Neuroscience, USA** ***2016***
  Fellowship award granted by the Kavli Foundation, USA

- **5nd LASchool for Education Cognitive and Neural Sciences, Chile** ***2015***

Fellowship award granted by James S. McDonnell Foundation, USA

- **4nd LASchool for Education Cognitive and Neural Sciences, Uruguay** *2014*
  Fellowship award granted by James S. McDonnell Foundation, USA

- **2nd LASchool for Education Cognitive and Neural Sciences, Argentina** *2012*
  Fellowship award granted by James S. McDonnell Foundation, USA

- **Program for Graduate Studies (Sponsorships)** *2010 – 2012*
  Coordination of Improvement of Higher Education Personnel (CAPES), Brazil

- **Undergraduate interchange program at UW Madison, USA** *Fall 2008*
  Full scholarship granted by Federal University of Minas Gerais, Brazil.

- **National Research Fellowship for** *2006 – 2010*
  Undergraduate Scientific Initiation (Sponsorship)
  National Counsel of Technological and Scientific Development (CNPq) , Brazil

AD-HOC REVIEWER FOR SCIENTIFIC JOURNALS

- Journal of Neuroscience, Cortex, NeuroImage, Scientific Reports, Cognition, Developmental Psychology, Developmental Science, Learning and Individual Differences, Vision Research, Journal of Vision, PLoS One, Journal of Numerical Cognition.

CLINICAL WORK

- **Neuropsychology Unit at the Clinical Hospital** *2009 – 2010*
  Federal University of Minas Gerais, Brazil
  Neuropsychologycal assessment of adults with neuropsychiatric disorders.

- **Association for Rehabilitation in the State of Minas Gerais, Brazil** *2008 –2009*
  Neuropsychologycal assessment of children with cerebral palsy.

OTHER ACTIVITIES

- **Center for Studies of Contemporary Thought** *2010 – 2011*
  Philosophy Department, Federal University of Minas Gerais Brazil
  Supervisor: Dr. Ivan Domingues
  Ethical implications of technoscience (biotechnology and neurosciences) for the future of humanity. The Center for Studies in Contemporary Thought has a collaboration with The Oxford Uehiro Centre for Practical Ethics, University of Oxford, UK.

REFERENCES

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