Recently, a special issue on Journal of Counseling Psychology (Vol 61, 4, Oct 2014) addressed how neuroscience can provide important conceptual and methodological outline to drive research programs in counseling psychology and clinical practice. In this special issue we contributed with three articles that derived from the collaboration between our lab members and other researchers. This special issue covered a wide range of topics including the definition of a “A Neuroscience Agenda for Counseling Psychology Research” by Óscar F. Gonçalves and Kristin M. Perrone-McGovern, while Joana Coutinho, Patrícia Oliveira Silva and Jean Decety addressed the role of “Neurosciences, Empathy, and Healthy Interpersonal Relationships: Recent Findings and Implications for Counseling Psychology”. A developmental approach was then tackled with the article “Neurosciences of Infant Mental Health Development: Recent Findings and Implications for Counseling Psychology” by Adriana Sampaio and Karin Lifter. Then, other articles addressed the neuroscience of child, adolescent, adult and aging development, always stressing and highlighting the implications for counseling psychology. It is a really interesting and updated overview on the need to integrate the neurosciences contributions in counseling psychology research and practice from infancy to aging.

Finally, I would like to emphasize that this collaborative work is another example of our successful, fruitful and solid achievements that is worthy of a special praise. I would like to congratulate all the authors and I hope that this tradition of sharing and collaborating with other research teams and institutions will remain to be our benchmark for all the upcoming years. I wish you all Happy Holidays, Merry Christmas and a Very Happy new 2015!
Alberto made a summary of his stay in the Institute of Radiology (Inrad) of the Hospital das Clínicas in Sao Paulo (Brazil). The laboratory of magnetic resonance, led by Professor Edson Amaro Jr is composed by a multidisciplinary team of researchers who carry out clinical studies using structural and functional MRI, namely pathological and healthy aging, parkinson’s disease, epilepsy, fibromyalgia or chronic pain mechanisms. The main purpose of Alberto’s visit was to learn how to perform simultaneous EEG and fMRI records and multimodal analysis by integrating and fusing the two signals.

**Alberto Crego**
Post-Doc Researcher

Ana Mesquita presented her recent data on the project “The impact of early life adversity on the social behaviour pathways: a crosstalk between oxytocin and corticosteroids”. The main objective of this project is to understand the impact of maternal separation occurring in two different developmental time windows in the adult social behavior and the underlying molecular mechanisms associated with these behavioral alterations. In this presentation, Ana showed some of the behavioral data regarding a social discrimination/recognition paradigm in control and early stressed animals. Data from RT-PCR of genes involved in the HPA axis and oxytocinergic systems were also evaluated in the hypothalamus and amygdala.

**Ana Mesquita**
Researcher

Marcelo presented a paper on the effects of musical preferences on brain responses to musical stimuli. The paper was entitled: ‘I love Rock ‘n’ Roll? – Music genre preference modulates brain responses to music.

**Marcelo Dias**
Research Scholar

Tatiana presented some recent data from a study that is part of her PhD project. This study examined the ERP correlates of self-generated vs. unfamiliar voice processing. The results were discussed in light of recent research on both self-voice and self-related information processing.

**Tatiana Magro**
PhD Student
Poster Presentations


Recent Publications

Ana Carolina Santos attended to the X Congreso de la Sociedad Española de Psicología Experimental / IX Congreso de la Sociedade Española de Psicofisiología y Neurociencia Cognitiva y Afectiva, at the University of Murcia, Spain. She presented a poster entitled “White matter integrity in Williams syndrome”. In this study, it was used DTI voxel-wise whole brain analysis to analyze white matter integrity in a group of participants with Williams Syndrome compared with a typically developing group. Santos, A. C. T. ; Maia, L. ; Vasconcelos, C. ; Fernandez, M. ; Garayzabal, E. ; Goncalves, O. F. ; Sampaio, A. White matter integrity in Williams Syndrome. X Congreso de la Sociedad Española de Psicología Experimental / IX Congreso de la Sociedade Española de psicofisiología y Neurociencia Cognitiva y Afectiva, Murcia, Spain, October 2014. (poster).


Published

Brief Summary

Sandra Carvalho, Jorge Leite and Óscar Gonçalves published in the prestigious journal Brain Stimulation a paper with the title of “Transcranial direct current stimulation based metaplasticity protocols in working memory”. This work represents a joint effort between 3 laboratories—the Neuropsychophysiology Lab (University of Minho); the Social and Cognitive Neuroscience Laboratory and Developmental Disorders Program (Mackenzie Presbyterian University) and the Spauding Neuromodulation Center (Harvard Medical School). The aim of this study was to test several TDCS-based metaplasticity protocols in working memory (WM), by studying the impact of various interstimulation intervals in the performance of a 3-back task. The results suggest that the polarity effects of tDCS on working memory are dependent on the previous level of activity of the recruited neural population. The implications of the results are discussed in the paper.
In Press

Accepted Papers


Brief Summary
Recent studies have demonstrated the positive effects of musical training on the perception of vocally expressed emotion. This study investigated the effects of musical training on event-related potential (ERP) correlates of emotional prosody processing. Our findings suggest that auditory expertise characterizing extensive musical training may impact different stages of vocal emotional processing.
Special Issue

Óscar Gonçalves, CIPsi - Escola de Psicologia da Universidade do Minho researcher and Kristin Perrone-McGovern edited a special issue of the *Journal of Counseling Psychology* about “The Integration of Counseling Psychology and Neuroscience”.

This section is composed by 6 articles, 3 of which had the participation of CIPsi researchers (Óscar Gonçalves, Adriana Sampaio, Joana Coutinho, Patrícia Oliveira)

- A neuroscience agenda for counseling psychology research
  Gonçalves, Óscar F.; Perrone-McGovern, Kristin M.

- Neurosciences of infant mental health development: Recent findings and implications for counseling psychology.
  Sampaio, Adriana; Lifter, Karin

- Neuroscience of child and adolescent health development.
  Fine, Jodene Goldenring; Sung, Connie

- Neurosciences and adult health behaviors: Recent findings and implications for counseling psychology.
  Simon-Dack, Stephanie L.; Marmarosh, Cheri L.

- Neuroscience research on aging and implications for counseling psychology.
  Wright, Stephen L.; Diaz, Fernando

- Neurosciences, empathy, and healthy interpersonal relationships: Recent findings and implications for counseling psychology.
  Coutinho, Joana Fernandes; Silva, Patrícia Oliveira; Decety, Jean

Award

Óscar F. Gonçalves, distinguished in Brazil as a SPECIAL VISITING RESEARCHER by the National Council for Scientific and Technological Development

The Brazilian National Council for Scientific and Technological Development awarded our lab member Óscar Gonçalves the title of “Special Visiting Researcher”. This award will allow Prof. Gonçalves the necessary technological and financial resources for the implementation of the research project “Modulating Activity within and Between Default Mode and Dorsal Attention Networks through Neurofeedback” to be implemented for the next three years in the Cognitive and Social Neurosciences Lab from the Center for Biological and Health Sciences at Mackenzie University directed by Prof. Paulo Boggio.
Sandra Carvalho, a research scientist at the Neuropsychophysiology Lab, University of Minho and at the Spaulding Neuromodulation Center, Harvard Medical School is now a member of the International OCD Foundation (IOCDF). IOCDF is a non-profit, membership-based organization, founded in 1986, which offers a wide range of services to a broad community of individuals with Obsessive-Compulsive Disorder (OCD) and/or related disorders. It also offers continuing education for board certified members in a variety of treatments for OCD and related disorders.

Dr. Sandra has been conducting research and performing clinical interventions with people with OCD and Hoarding Disorder for the past few years. Her first activity with the IOCDF was a three-day intensive Behavior Therapy Training Institute (BTTI) training course on Hoarding at Boston University. As a part of the certification process required by the American Psychological Association, Dr. Randy Frost, an expert in OCD and Hoarding Disorder, and also member of the IOCDF’s Scientific Advisory Board, will mentor her for the next 2 years.

Joana Coutinho participated in a TV show Porto Canal called “Mentes Que Brilham”. In this interview the researcher explained the major results of the study on the effects of jet lag on the default mode network, recently published on “Chronobiology International”

You can watch the interview here.

She also gave an interview in a radio broadcast that is transmitted by the radio of our university (RUM). This program aims to introduce the UM´s researchers, so that the public in general gets to know how the personal and professional life of a researcher is.

You can listen to the interview here.
A Vocal Brain: Cerebral Processing of Voice Information
Pascal Bélin
Institut des Neurosciences de La Timone, UMR 7289, CNRS & Aix-Marseille Université, Marseille, France
Member of the research project “Electrophysiological investigation of auditory affective processing in schizophrenia and its relationship with self-monitoring: a window into auditory hallucinations?”
(PTDC/PSI-PCL/116626/2010; PI: Ana P. Pinheiro)

The human voice carries speech but also a wealth of socially-relevant, speaker-related information. Listeners routinely perceive precious information on the speaker’s identity (gender, age), affective state (happy, scared), as well as more subtle cues on perceived personality traits (attractiveness, dominance, etc.), strongly influencing social interactions. Using voice psychoacoustics and neuroimaging techniques, we examine the cerebral processing of person-related information in perceptual and neural voice representations. Results indicate a cerebral architecture of voice cognition sharing many similarities with the cerebral organization of face processing, with the main types of information in voices (identity, affect, speech) processed in interacting, but partly dissociable functional pathways.

On the role of nonverbal signals for emotions: Insights from humans, dogs and fish
Annett Schirmer
National University of Singapore
Consultant of the Project “Examining abnormalities in auditory emotional processing in schizophrenia: an electrophysiological investigation with high-risk, early-stage and chronic patients”
(PTDC/MHN-PCN/3606/2012; PI: Ana P. Pinheiro)

Human communication involves language but also evolutionarily more ancient nonverbal signals including vocal, facial and tactile expressions. These latter signals differ from language in that they require less learning and less intentionality in both the sender and the receiver. Research in my lab explores the kind of nonverbal signals that are employed in social interactions, their relevance for emotions, and their influence on interaction partners. While our focus is primarily on understanding human processes, we study both human and non-human communication in an effort to discern the roots and general functionality of nonverbal signals. In this talk, I will provide an overview of our work and disclose data from three very distantly related species – human, dog, and fish. Human data comes from a study on voice processing and shows how vocal emotions shape memory for the verbal content of speech. Dog data comes from a study comparing facial emotions in humans and dogs and exploring whether and how both are perceived by humans. Fish data comes from a study asking whether the stress reducing effect of touch in mammals extends to aquatic taxa. The results of this research highlight the power of nonverbal signals in shaping the mental state and behaviors of interaction partners. Additionally, they outline cross-species similarities that can be targeted in future research to further our understanding of the genetic and neural mechanisms that enable humans to communicate without words.
Lab Team

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Alberto Crego, PhD (Post-Doc)
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Ana Ganho, MSc (PhD Student)
Ana Mesquita, PhD (Researcher)
Ana Pinheiro, PhD (Researcher)
Ana Vigário, MSc Student
Catarina Fernandes, MSc (PhD Student)
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Fernando Macedo (Lab Technician)
Helga Miguel, MSc (PhD Student)
Jason Ridge, MSc (Research Scholar)
João Pedroso, MSc (Research Scholar)
Joana Coutinho, PhD (Post-Doc)
Jorge Alves, PhD (Collaborator)
Jorge Leite, PhD (Post-Doc)
Liliana Maia, MSc (Collaborator)

Luciana Gomes, MSc (PhD Student)
Marcelo Dias, MSc (Research Scholar)
Margarida Vasconcelos, MSc (PhD Student)
Marisa Faria, MSc Student
Miguel Soares, MSc (Collaborator)
Óscar Gonçalves, PhD (Co-Director)
Patrícia Pereira, MSc Student
Patrícia Oliveira-Silva, MSc (PhD Student)
Paula Castiajo, MSc (PhD Student)
Rosana Magalhães, PhD (Collaborator)
Sandra Carvalho, PhD (Post-Doc)
Sónia Sousa, MSc (PhD Student)
Sara Cruz, MSc (PhD Student)
Sofia Faria, MSc Student
Soraia Lúcia, MSc Student
Tatiana Magro, MSc (PhD Student)
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