UNIVERSIDAD
DE GRANADA

MASTER STUDENTS' GUIDE
2024-2025

Guide to the official master program in Cognitive and Behavioral Neuroscience

In this guide you will find detailed information about our Master's program. The Master in Cognitive and Behavioral Neuroscience aims to train students in research relative to cognitive functions and their neural basis. **The whole program is research-oriented**, and it also provides its graduates the tools that facilitate their job placement in the field of neuropsychology and other applied fields related to neuroscience.

The program is aimed at graduates in Psychology or related disciplines. Selected students with a specific interest in neuropsychology will be given the opportunity to follow the **neuropsychology itinerary**, requiring the compulsory completion of courses related to this field and practical training in neuropsychology clinics.

Official Website:

http://masteres.ugr.es/neurocg/

Facebook:

https://www.facebook.com/MasterNCCUGR/

Sections

Credit's Distribution in the master

The master's degree consists of 60 ECTS, and they are distributed as follows:

- A minimum of 8 ECTS of courses of the METHODOLOGICAL Module.
- A maximum of 20 ECTS from the rest of the COGNITIVE AND BEHAVIORAL NEUROSCIENCE Module
- 5 ECTS of the course CURRENT PERSPECTIVES IN PSYCHOLOGY AND NEUROSCIENCE
- 15 ECTS of PRACTICAL TRAINING (RESEARCH OR NEUROPSYCHOLOGY INTERNSHIPS)
- 12 ECTS of the FINAL MASTER'S THESIS

The students following the Neuropsychology Itinerary must compulsorily enroll in the following courses: Neuropsychological Assessment, Neuroanatomy and Functional Neuroimaging, Neuropsychology and Developmental Neuropsychology, as well as in the Neuropsychology internships in clinical Neuropsychology centers.

A course from some other official Master program can be chosen, which requires authorization from the Academic Committee of the Master.

Please note that, to follow the neuropsychology itinerary, you must be a native Spanish speaker, or at least to certify Spanish language skills proficient enough to interact with neurpsychological patients and their families (level c).

Accordingly, most information in this guide regarding the Neuropsychology itinerary will be in Spanish.

Calendar and timetables

Courses written in red are offered in English (Group A) and a Spanish (Group B). All course names are in Spanish to facilitate their identidication in the enrolment process

First teaching period: September 30th – November 29th, 2024 (Exams: Dec 9th – Dec 13th)

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:50	**NA y NI funcional A y B** A.Inf.1 / aula 0.3	**Psiconeuroinmunología** Seminario 3	**Evaluación NPs A** Seminario 4 **Aprendizaje** Seminario 3	**Plasticidad** Seminario 3	**Métodos A/B** A.Inf.3/A.Inf.4
11:00-12:50	**Psiconeuroinmunología** Seminario 3	**Emoción** Seminario 3	**Evaluación NPs A** Seminario 4 **Emoción** Seminario 3	**Memoria A/B** Seminario 3/Seminario 4	**Memoria A/B** Seminario 3/Seminario 4
15:00-16:50	**Evaluación NPs B** Seminario 4	**Plasticidad** Seminario 3	**NA y NI funcional A y B** A.Inf.1 / aula 0.3	**Aprendizaje** Seminario 3	This slot is flexibly reserved for seminars offered as part of the **Current Perspectives in Psychology and Neuroscience** course
17:00-18:50	**Evaluación NPs B** Seminario 4	**Neuroergonomía** Seminario 3	**Métodos A/B** A.Inf.3/A.Inf.4	**Neuroergonomía** Seminario 3	

END DATES: Aprendizaje: 27/11/2024; **Emoción:** 26/11/2024 **Evaluación NPs:** 25/11/2024 (15:00h-16:50h) / 27/11/2024 (9:00h-11:00h); **Memoria:** 28/11/2024; **Métodos**: 27/11/2024; **NA y NI Funcional:** 25/11/2024; **Neuroergonomía:** 26/11/2024; **Plasticidad:** 26/11/2024; **Psiconeuroinmunología:** 25/11/2024.

Second teaching period: January 8th – March 7th, 2025 (Exams: March 10th-14th)

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:50	**Juicios y Toma de Decisiones A/B** Seminario 3/Seminario 4	**Atención A/B** Seminario 3/Seminario 4	**Juicios y Toma de Decisiones A/B** Seminario 3/Seminario 4	**Atención A/B** Seminario 3/Seminario 4	**Diseño Exp. Avanzado** A.Inf.3
11:00-12:50	**Percepción** Seminario 3	**NPs. del Desarrollo A/B** Seminario 3/Seminario 4	**Lenguaje** Seminario 3	**Neuropsicología A/B** Seminario 3/Seminario 4	**Neurociencia Cognitiva A/B** Seminario 3/Seminario 4 **Modelos Animales** Seminario 2
15:00-16:50	**Lenguaje** Seminario 3	**Neurociencia Cognitiva A/B** Seminario 3/Seminario 4		**Percepción** Seminario 3	This slot is flexibly reserved for seminars offered as part of the **Current Perspectives in Psychology and Neuroscience** course
17:00-18:50	**Neuropsicología A/B** Seminario 3/Seminario 4	**Modelos animales** Seminario 3	**Diseño Exp. Avanzado** A. Inf.3	**NPs. del Desarrollo A/B** Seminario 3/Seminario 4	

END DATES: Atención: 06/03/2025; **Diseño Exp. Avanzado:** 05/03/2025; **Juicios:** 05/03/2025; **Lenguaje:** 05/03/2025; **Modelos Animales:** 07/03/2025; **Neurociencia Cognitiva:** 07/03/2025; **Neuropsicología:** 06/03/2025; **NPs del Desarrollo:** 06/03/2025; **Percepción:** 06/03/2025.

Exams

First period: Dec 9th – Dec 13th, 2024

	FIRST PERIOD – FIRST WEEK				
	Monday (9 Dec)	**Tuesday (10 Dec)**	**Wednesday (11 Dec)**	**Thursday (12 Dec)**	**Friday (13 Dec)**
9:00-13:00		**Psiconeuroinmunología** Seminario 3	**Evaluación NPs A** Seminario 4 **Emoción** Seminario 3	**Memoria A/B** Seminario 3/Seminario 4	**Métodos A/B** A.Inf 3/A.Inf.4
15:00-19:00		**Neuroergonomía** Seminario 3 **Plasticidad** Seminario 4	**NA y NI funcional A y B** A.Inf.4 / aula 11	**Aprendizaje** Seminario 3	**Evaluación NPs B** Seminario 4

Second period: March 10th-14th, 2025

	SECOND PERIOD				
	Monday (10 March)	**Tuesday (11 March)**	**Wednesday (12 March)**	**Thursday (13 March)**	**Friday (14 March)**
9:00-13:00	**Percepción** Seminario 3	**Atención A/B** Seminario 3/Seminario 4	**Juiciosy Toma de Decisiones A/B** Seminario 3/Seminario 4	**Neuropsicología A/B** Seminario 3/Seminario 4	**Modelos Animales** Seminario 3
15:00-19:00	**Lenguaje** Seminario 3	**Neurociencia Cognitiva A/B** Seminario 3/Seminario 4	**Diseño Exp. Avanzado** A.Inf.3	**NPs. del Desarrollo A/B** Seminario 3/Seminario 4	

Exams of the Extraordinary call: September 1st – 5th, 2025 (definitive dates to be established by mutual agreement with the professor/lecturer responsible)

Students' representative

According to the current regulations, a students' representative will be appointed as a member of the Academic Committee of the Master's Degree. The election of the representative must take place before the 8th of November, 2024.

Regulations

This master, as the rest of the official masters offered by the University of Granada, is considered an official one and is thus adapted to the European Credit Transfer System (ECTS) since the 2010/2011 academic year. Hence, a series of regulations have been put in place to guarantee the rights of the students. These regulations can be found here: https://bit.ly/3eL9yvV.

The regulations related to the internship, credit recognition, permanence norms, and final dissertation guidelines are of core importance. These guarantee the students' right to have two (Ordinary and Extraordinary) calls per course in each academic year, including the Final Master's Thesis (TFM). Once these calls are spent, students must enroll again, but the price per credit in further enrollments is increased.

The completion of your Master's studies in an academic year is important if you want to apply for FPU (or similar) scholarships and to admission to a Doctoral Program. However, **if before the 31st of December a student is aware that s/he will not be able to finish the TFM in the current academic year, they can request the modification of the enrollment and the refund of public prices**, which will allow not spending the two calls for the course, and thus to avoid the additional costs of a second enrollment in the following course.

In addition, students can change their enrollment (unsubscribe or enroll in master's courses) at no cost, provided that this is done before the third class of the course has taken place.

How to communicate complaints, questions, recommendations and/or suggestions

For information regarding these procedures, please see the annex of this guide on page 99.

Key dates

Teaching periods (see pp. 9-12)

- **September 30th – November 29th, 2024.** First teaching period.
- **January 8th – March 7th, 2025.** Second teaching period.
- Exams will take place right after each of these two periods. The extraordinary call for these courses will take place during the week of September 1st – 5th, 2025.

2024

- **September 23th – 27th, 2024**. Initial meeting with the students.
- **September 23th – October 4th, 2024.** Opening and welcome event.
- **September 23rd – 27th, 2024.** Open days of external internship centers.
- **September 23rd – 27th, 2024.** Open days of CIMCYC laboratories.
- **October 31st, 2024.** Deadline to choose a supervisor for the internship and Master's Thesis.
- **November 8th, 2024.** Deadline to choose the students' representative.
- **Week of November 24th, 2024.** First tutorial on surveys of teaching performance

2025

- **Week of March 7th, 2025.** Second tutorial on surveys of teaching performance
- **March 17th – June 13th, 2025.** Research or Neuropsychology Internship period.
- **May 5th, 2025**. Delivery of a pre-registration of research or outline of the Master's Final Thesis to the supervisor.
- **June**, **2025.** Conference Career opportunities
- **June 27th, 2025.** Final thesis submission in ordinary call.
- **July 7th – 11th, 2025**. Final Dissertation defense (Ordinary call).
- **September 1st, 2025.** Final thesis submission in Extraordinary call.
- **11th – 12th, 2025**. Final Dissertation defense (Extraordinary call).

UNIVERSIDAD
DE GRANADA

SUPPLEMENTARY COURSES

TALLER DE BÚSQUEDA BIBLIOGRÁFICA (in Spanish)

Dª Gracia Fernández Maldonado, directora de la Biblioteca de Psicología de la Universidad de Granada, impartirá el ***Seminario sobre búsqueda de información bibliográfica especializada y Gestores de bibliografía*** encaminado a dar a conocer los recursos electrónicos de la Biblioteca Universitaria de Granada y los Repositorios institucionales y buscadores académicos que posibilitan la búsqueda de la información más relevante en Neurociencia. En este Seminario se aprenderá también a utilizar un gestor de bibliografía, mediante la elaboración de una base de datos bibliográfica personal. Todos estos conocimientos serán especialmente útiles en la elaboración de los trabajos monográficos y en el TFM.

SEMINARIOS DE CASOS CLÍNICOS (SERIE "MÓNICA TRIVIÑO") (in Spanish)

Durante el curso se realizarán varios talleres formativos de Neuropsicología, que se anunciarán con antelación. Estos talleres tendrán carácter obligatorio para los estudiantes que opten por el itinerario de Neuropsicología, y serán optativos para quienes opten por investigación. A todos los asistentes se les entregará certificado.

ADDITIONAL METHODS COURSES

Usually every year we organize week-long training courses in additional topics that are relevant for research in the field of Cognitive and Behavioral Neuroscience, such as Matlab programming or behavioral and neuroimaging data analysis. These courses will be optional for all students, and attendees will receive a certificate.

FINAL MASTER'S THESIS (TFM)

REGULATIONS OF THE UNIVERSITY OF GRANADA REGARDING THE FINAL MASTER'S THESIS (Approved the 4th of March 2013)

These regulations are to be known by every students, and are available at https://bit.ly/3Bh48VN.

TYPES OF FINAL MASTER'S THESIS (TFM) IN THE MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

The TFM in our master is research-oriented, and because of this, it provides direct access to the Psychology PhD program. This TFM has two modalities, depending on the itinerary of the student: Research training or Neuropsychology.

Students will receive detailed instructions for each of these two modalities in the PRADO teaching platform. Detailed information can also be obtained from the academic guide of these courses (please see https://bit.ly/3rAc0uE)

The following pages provide a summary of these.

RESEARCH TRAINING ITINERARY AND CORRESPONDING FINAL DISSERTATION

Students must complete 15 ECTS of supervised research and a TFM (12 ECTS). Please check the key dates to be taken into account at p. 15.

Supervised research training procedure

1.- Students must choose a line of research and a supervisor. Usually, the supervisor offers the student to work in a line of research that is already in progress. Due to time constraints, the student cannot be asked to do something truly novel or to work on methodologies and procedures that are unfamiliar for the supervisor.

2.- Research credits can be obtained with the completion of a single empirical study.

3.- The research must attest that the students know and are capable of applying some of the tools and methodologies of the field (presentation programs necessary to carry out the experiments, ERPs, Eye Movements, stimulation techniques etc.). The master will support this process with practical seminars of some of these tools (e-prime, SPSS, ERPs or other techniques). Students must enroll in those that are relevant to their research work.

4.- Students should carry out empirical work carried out essentially by them. The supervisor will provide help throughout the process regarding readings choices, investigation procedures, and preparation of final report, but their participation will only be of support. The first authorship of the work will mostly correspond to the student.

5.- In addition to carrying out the research, students are required to attend the seminars and conferences offered in the master. Lack of attendance must be justified and supplemented by substitutive activities.

6.- At the end of the period of investigation, the students must write a report in which they present the results of the empirical study carried out. This will be the Final Master Thesis.

7.- The TFM should have the format of an APA-formatted scientific article with all its corresponding sections, including references.

8.- Students must present and defend orally the results of their research. This oral presentation should last 20 minutes, and it will be followed by questions from the 3 members of the Evaluation Committee, also during 20 minutes.

9.- The evaluation committee will assess the competences acquired by the student during this period, according to the general regulations for the evaluation of competences proposed by the Graduate School.

ITINERARIO DE NEUROPSICOLOGÍA Y TFM ASOCIADO (In Spanish)

Los estudiantes de este itinerario realizarán 15 ECTS de prácticas clínicas en centros concertados de Neuropsicología, y realizarán un TFM de una temática asociada (de marzo a julio/septiembre).

1.- La asignación de estudiantes a las plazas de centros externos se realizará principalmente por el expediente del alumno/a y el CV (que se solicitará para la asignación).

2.- Se asignarán tutores que se encargarán de dirigir las actividades prácticas del alumno/a, así como su evaluación durante las mismas, y la tutorización del TFM.

3.- Las actividades prácticas a realizar serán aquellas descritas en la página web para cada una de las plazas de centros externos.

El TFM de Neuropsicología consiste en realizar una propuesta de investigación clínica en el ámbito neuropsicológico. Esa propuesta de investigación puede obedecer a varios diseños, pero en todo caso deberá contener toda la información sobre 1) la o las hipótesis a corroborar, 2) la descripción detallada de la evaluación a realizar, ya sea en un caso o conjunto pequeño de ellos (diseño de caso único) o en un grupo mayor de ellos (ensayo controlado aleatorizado), 3) las herramientas de intervención, y 4) Los análisis que se realizarían para corroborar esa hipótesis. Se recomienda la asistencia a los talleres metodológicos ofertados por el Máster para más información sobre estos tipos de diseños.

No es necesario aportar datos, ya que el reclutamiento y la recogida de datos en la clínica suele requerir de periodos de tiempo (a veces años) que superarían la duración de las propias prácticas. En general, se espera que las personas que os formáis en la práctica neuropsicológica, sepáis abordar las preguntas que surgen en el trabajo diario con los pacientes con exhaustividad y rigor científico.

CALLS AND DEADLINES

Calls: there are two per academic course, in July (Ordinary call) and September (Extraordinary call). In case of not passing the TFM after both calls, students will have to pay fees in the following academic year, at a higher cost. Please see p. 15 for key dates.

Deadlines: The TFM will be submitted 10 days before its defense. The PDF file of the TFM will be uploaded to the Turnitin platform to evaluate for potential plagiarism and unauthorized use of AI tools. **Plagiarism will automatically invalidate the TFM.**

EVALUATION COMMITTEES

The TFM will be evaluated by a committee whose members are lecturers from the Master (Research) or lecturers and supervisors from the external Neuropsychology centers (Neuropsychology Itinerary)

RESEARCH ITINERARY: To be assigned.

NEUROPSYCHOLOGY ITINERARY: To be assigned.

UNIVERSIDAD
DE GRANADA

RESEARCH INTERNSHIP: RESEARCH LINES (2024 – 2025)

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Overview (in alphabetical order)

Master's Thesis (TFM) Topic of Research

A first Spanish evaluation protocol based on the analysis of variables that can predict safe "driving capacity" after suffering brain damage (P20-00338-PAIDI)

IPs: Cándida Castro & María Rodríguez Bailón

Web: www.ugr.es/local/candida

e-mail: candida@ugr.es

Room: 208 (Psychology Building)

Brief description of the project:

In Spain, according to the Spanish Federation of Cerebral Damage between the years 2010-2012, 420,000 people with acquired brain injury were recorded. 78% of cases originate from a stroke. Every year there are 104,071 new cases. People who have suffered a cerebrovascular accident (CVA) or stroke may show cognitive alterations in memory processes, concentration, decision-taking and problem-solving, etc. Likewise, they frequently undergo personality changes, making them more short-tempered or rigid in their attitudes. Although a high percentage of these people manage to survive the stroke, it is common for them to show both physical and cognitive after-effects that may affect their ability to manoeuvre a motor vehicle safely. However, evaluating the "fitness to drive" of patients suffering an Ictus remains unresolved. The current project may be considered as a pledge of collaboration between researchers expert in the fields of Neuropsychology and Occupational Therapy. Specialists in the evaluation of impaired cognitive processes following brain injury that impacts on day-to-day life will work together with specialists in the field of cognitive processes relevant to safe driving. The aim of this collaboration is to study and test a new evaluation protocol that recognises the cognitive processes needed for driving. This will allow us to identify which cognitive functions are determinants for the task of driving and, even more, on which of these aspects are predictors of safe driving.

Representative publications:

Christie, N., Savill, T., Grayson, G., Newby, G. & Tyerman, A. (2001). *The assessment of fitness to drive after brain injury or illness*. Report TRL485, Crowthorne. UK

Lundqvist A., Gerdle B., & Rönnberg J. (2000). Neuropsychological aspects of driving after a stroke—in the simulator and on the road. *Applied Cognitive Psychology*, *14*(2), 135-150.

Patomella, A.-H., & Bundy, A. (2015). P-Drive: Implementing an Assessment of On-Road Driving in Clinical Settings and Investigating Its Internal and Predictive Validity. *The American Journal of Occupational Therapy: 69*(4), 6904290010

Master's Thesis (TFM) Topic of Research

Analysis of Learning by Stimulus Exposure: Theoretical and Practical Implications

Principal Investigator: Isabel de Brugada Sauras
Web: http://www.ugr.es/~neple/members_isabelbrugada.htm
e-mail: dbrugada@ugr.es
Room: 211 (Psychology Building)

Brief description of the project:

Animal models are used to study how repeated experience with sapid stimuli, with or without nutritional consequences, can create and modify preferences and eating habits, as well as the different factors that modulate this process. This knowledge would allow the development of behavioural intervention programs to promote healthy eating habits. In the present project a series of studies are proposed directed, on one hand, to identify the fundamental mechanisms behind exposure effects, with the goal of proposing a unified theory based on a limited number of well-known central concepts. On the other hand, this knowledge is going to be applied in the area of eating behaviour, studying how repeated exposure to different foodstuff can result in changes in how the organism responds to them. For instance, exposure to a variety of similar foods would result in a greater discrimination between them, and consequently in an increased intake caused by a disruption in sensory-specific satiety. Also, exposure to sweet food without caloric consequences can alter the predictive relationship between sweet flavour and calories, causing metabolic imbalances. This last idea could explain the paradoxical finding that the regular consumption of non-caloric edulcorated food is related to weight increase and a higher total intake.

Representative publications:

Gil, M, de Brugada, I & Hall, G. (2021) Motivational Factors Controlling Flavor Preference Learning and Performance: Effects of Preexposure with Nutritive and Nonnutritive Sweeteners *Behavioural processes* https://doi.org/10.1016/j.beproc.2021.104462

González, A., Recio, S. A., Sánchez, J., Gil, M., & de Brugada, I. (2018). Effect of exposure to similar flavours in sensory specific satiety: Implications for eating behaviour. *Appetite*, 127, 289–295.

González, A., Sánchez, J., & de Brugada, I. (2022). Habituation as an underlying mechanism for Sensory Specific Satiety: An assessment using flavor consumption and preference in rats. *Appetite*, 105821. https://doi.org/10.1016/j.appet.2021.105821

Master's Thesis (TFM) Topic of Research

Animal models in Binge Drinking and pharmacological test in depression

Principal Investigator: Ignacio Morón Henche
Web: http://neplegroup.com/
e-mail: imoron@ugr.es
Room: Animalario de Cartuja (CIC)

Brief description of the project:
In this line of research, animal models will be used to better understand the biological basis of binge drinking. Likewise, the possibility of studying new fast-acting drugs for the treatment of depression again from animal models can be considered.

Representative publications:

Avena, N. M., Carrillo, C. A., Needham, L., Leibowitz, S. F., & Hoebel, B. G. (2004). Sugar-dependent rats show enhanced intake of unsweetened ethanol. Alcohol, 34(2-3), 203-209.

Fortuna, J. L. (2010). Sweet preference, sugar addiction and the familial history of alcohol dependence: shared neural pathways and genes. Journal of psychoactive drugs, 42(2), 147-151

Jeanblanc, J., Rolland, B., Maurage, P., Gierski, F., & Naassila, M. (2019). Animal models of binge drinking: behavior and clinical relevance. In Neuroscience of Alcohol (pp. 57- 66). Academic Press

Jelen, LA & Stone, JM (2020). Ketamine for depression. International Review of Psychiatry, 33(3): 207-228.

Munn-Chernoff, M. A., Johnson, E. C., Chou, Y. L., Coleman, J. R., Thornton, L. M., Walters, R. K., ... & Slachtova, L. (2021). Shared genetic risk between eating disorder-and substance-use-related phenotypes: Evidence from genome-wide association studies. Addiction biology, 26(1), e12880

Ruiz-Leyva, L., Vázquez-Ágredos, A., Jiménez-García, A. M., López-Guarnido, O., Pla, A., Pautassi, R. M., ... & Cendán, C. M. (2022). From binge eating to binge drinking: A new and robust paradigm for assessing binge ethanol self-administration in male rats. Addiction Biology, 27(2), e13153

Line of Research for End of Master's Project (TFM)

Are we going on sale? Discounts processing

Principal Investigator(s): Pedro Macizo & Fernando Ojedo
Web: https://www.researchgate.net/profile/Pedro_Macizo
http://memory.ugr.es/member/pedro-macizo
e-mail: pmacizo@ugr.es
Room: 310 (Psychology Department)

Brief description of the project or research line in which the student would conduct the TFM:

When we go on sale and enter a store, we can find different ways to display the sales. For example, the old price crossed out and replaced by a lower price. Or, on the other hand, the original price and the percentage discount applied to it. There are practically no scientific studies evaluating the most efficient way to process these types of discounts (final value vs. percentages). In addition, this would have serious implications for people who are "afraid" or "anxious" about math. In this line of research, we propose ecological/experimental studies to evaluate how people do something as common as calculating the money they save on sales.

Reference publication on the subject of the TFM:

Ojedo, F., & Macizo, P. (2023, July). *Does math anxiety influence how people process discounts?* Poster presented at the Mathematical Cognition Learning Society

Master's Thesis (TFM) Topic of Research

Attentional networks and Arousal and Executive Vigilance

Principal Investigators: Elisa Martín-Arévalo, Fabiano Botta and Juan Lupiáñez
Web: http://neurocog.ugr.es/
e-mail: emartina@ugr.es / fabianobotta@ugr.es / jlupiane@ugr.es
Room: 381 (EMA) / 398 (JL) (Psychology Building).

Brief description of the project:
Following the framework of Posner about three attentional networks, we have developed different tasks to measure alertness, attentional orienting and cognitive control. In the last version of the task we added two measures of vigilance, one more related to maintaining a level of executive vigilance to detect infrequent but relevant targets (Executive Vigilance), and another rather related to the maintenance of a high level of activation to react immediately and without much control to the abrupt appearance of new salient stimuli (Arousal Vigilance). An on-line version of the task has also been developed (http://neurocog.ugr.es/Sitio_web/ANTI/), so that the attentional performance can be measured in multiples contexts, either in the laboratory or in more natural situations. With these tools, several lines of research are currently being carried out to dissociate Executive from Arousal Vigilance, while studying the effects of Electrical Brain Stimulation, Emotional Induction, Physical Exercise and Sport Practice, Musical Practice, Mindfulness, etc.

Representative publications:

Luna, F. G., Román-Caballero, R., Barttfeld, P., Lupiáñez, J., & Martín-Arévalo, E. (2020). A High-Definition tDCS and EEG study on attention and vigilance: Brain stimulation mitigates the executive but not the arousal vigilance decrement. *Neuropsychologia, 142*, 107447.

Román-Caballero, R., Martín-Arévalo, E., & Lupiáñez, J. (2020). Attentional networks functioning and vigilance in expert musicians and non-musicians. *Psychological Research*, (0123456789). https://doi.org/10.1007/s00426-020-01323-2

Thomson, D. R., Besner, D., & Smilek, D. (2015). A Resource-Control Account of Sustained Attention: Evidence From Mind-Wandering and Vigilance Paradigms. *Perspectives on Psychological Science, 10*(1), 82-96. doi:10.1177/1745691614556681.

Master's Thesis (TFM) Topic of Research

Bilingualism, second language learning and cognitive control

Principal Investigators: Teresa Bajo & Daniela Paolieri
Web: http://memory.ugr.es/member/ma-teresa-bajo
http://memory.ugr.es/member/daniela-paolieri
e-mail: mbajo@ugr.es; dpaolieri@ugr.es
Room: 212; 315 (Psychology Building)

Brief description of the project:

Several theories of bilingual lexical processing assume a parallel activation of the lexicons of the two languages. In this research line our aim is to understand the extent of the interaction between the two languages in the bilingual mental lexicon at different linguistic levels and the relation with the executive functions, and memory. The experimental methodology used in our research team ranges from behavioural analyses (reaction times and response accuracy and eye-tracking monitoring) and recording of brain activity (EEG and FMRi), to study both production and comprehension, and the impact of using first and second language in memory and learning processes.

Representative publications:

Paolieri, D., Demestre, J., Guasch, M., Bajo, T., & Ferré, P. (2020). The gender congruency effect in Catalan–Spanish bilinguals: Behavioral and electrophysiological evidence. *Bilingualism: Language and Cognition*, 1-11. DOI: https://doi.org/10.1017/S1366728920000073

Paolieri, D., Padilla, F., Koreneva, O., Morales, L., & Macizo, P. (2019). Gender congruency effect in second language production: Evidence from Russian-Spanish bilinguals. *Bilingualism: Language and Cognition, 22*, 112-129. doi: 10.1017/S1366728917000591

Pérez, A., Hansen, L., & Bajo, T. (2019). The nature of first and second language processing: The role of cognitive control and L2 proficiency during text-level comprehension. *Bilingualism: Language and Cognition, 22*, 930-948.

Master's Thesis (TFM) Topic of Research

Brain processes underlying the development of conscious attention in newborns

Principal Investigators: Ana Chica y Charo Rueda
Web: https://blogs.ugr.es/attentionandconsciousness/; https://wpd.ugr.es/%7Elabncd/
e-mail: anachica@ugr.es; rorueda@ugr.es
Room: Ana: 381 (Psychology Building); Charo: 314 (Psychology Building), LabNCd (Lab24, CIMCYC)

Brief description of the project:
This project aims to study the emerging brain mechanisms of conscious attention in newborn babies (1 to 4 months of age). For that purpose, we are using a mismatch negativity paradigm in which we present sequences of auditory stimuli to babies while we record their brain responses to either local or global violations of the sequence. Local violations are salient changes (oddballs), which elicit a mismatch negativity (MMN) in the EEG recording even when participants are asleep, thus requiring a minimal level of consciousness. However, global violations are changes in a predefined sequence, requiring integration of information in time and, in adults, are not found unless they have an integrational conscious level (i.e. when awake o in coma but with high recovery probability; see Bekinschtein et al., 2009). Previous research has shown that newborn babies and even pre-born babies show MMN to local violation, whereas there is some evidence that at 3-4 months of age awake babies show the MMN to global violations (Basirat et al., 2014). In this project, we are working on replicating this developmental pattern in a longitudinal cohort of infants that will come to the lab twice, at 1-2 and 3-4 months of age. We use high-density EEG to measure MMN in those babies in response to local and global violations of auditory sequences. Besides, babies undergo a MRI session in which we record high resolution images of gray and white matter, as well as resting state activation while asleep. The purpose of the MRI session is to examine whether the maturation of particular fiber tracks in the brain and patterns of brain activation and functional connectivity between postero-anterior systems involved in auditory processing are associated with the emergence of the conscious integration of information.

Representative publications:

Bekinschtein, T.A., et al., (2009) Neural signature of the conscious processing of auditory regularities. *Proceedings of the National Academy of Sciences,* 106(5): p. 1672.

Basirat, A., S. Dehaene, and G. Dehaene-Lambertz, (2014) A hierarchy of cortical responses to sequence violations in three-month-old infants. *Cognition,* 132(2): p. 137-150.

Martín-Signes, M., P.M. Paz-Alonso, and A.B. Chica (2019) Connectivity of Frontoparietal Regions Reveals Executive Attention and Consciousness Interactions. *Cereb Cortex, 29*(11): p. 4539-4550.

Master's Thesis (TFM) Topic of Research

Characterizing the mechanisms for task coding in novelty scenarios.

Principal Investigators: Ana F. Palenciano and María Ruz

Web: https://wpd.ugr.es/~humneuro/

e-mail: palencianoap@ugr.es, mruz@ugr.es

Offices: 343 and 1 (CIMCYC)

Brief description of the project:

Across our lifespan, humans are able to configure their actions according to a vast (practically infinite) pool of rules and tasks. Such remarkable flexibility leads to the question of how task information is encoded in order to efficiently generate this diverse behavioral repertoire. Previous evidence has highlighted the role of conjunctive coding, a mechanism that generates unique task representations by non-linearly combining their constituent components (i.e.: stimulus, responses, associations between them, etc.), thus facilitating task segregation. Nonetheless, the results obtained so far are based on repetitive experimental paradigms where participants apply a very small set of rules, which are overly practiced. In consequence, is it unknown how conjunctive task representations emerge from scratch in novel situations, or whether the absence of experience leads to different coding mechanisms. The current project aims to fill this gap by developing a paradigm that enables comparing the coding format between novel and practiced tasks. We will obtain behavioral indexes linked in the past with different task coding mechanisms, which are based on the sequential switching costs. Overall, the results obtained will be key to better understand how we deal with novel, changing demands, and more generally, to extend previous models of cognitive flexibility. Furthermore, the data acquired could be the grounds for future neuroimaging (fMRI, EEG) experiments tackling these questions.

Representative publications:

González-García C, Arco JE, Palenciano AF, Ramírez J, & Ruz M. (2017) Encoding, preparation and implementation of novel complex verbal instructions. Neuroimage148, 264-273. https://doi: 10.1016/j.neuroimage.2017.01.037

Palenciano A. F., González-García, C., Arco, J. E., & Ruz, M. (2019). Transient and Sustained Control Mechanisms Supporting Novel Instructed Behavior. Cerebral Cortex, 29(9), 3948–3960, https://doi.org/10.1093/cercor/bhy273

Master's Thesis (TFM) Topic of Research

Cognitive and brain functioning in strain states

Principal Investigators: Chiara Avancini, Luis Ciria & Daniel Sanabria

Web: https://hbc.ugr.es/cognitive-affect-dynamics/

e-mail: chiara.avancini@ugr.es; lciria@ugr.es; daniel@ugr.es

Room: Chiara and Luis: 35, CIMCYC; Daniel: 315, Psychology Building

Brief description of the project:

In our research group we investigate the cognitive and brain functioning in strain states such as physical exercise and drowsiness. We are also interested in the role of cognitive and psychological factors in physical and sports performance.

Representative publications:

Alameda, C., Avancini, C., Sanabria, D., Bekinschtein, T. A., Canales-Johnson, A., & Ciria, L. F. (s. f.). Staying in control: Characterizing the mechanisms underlying cognitive control in high and low arousal states. British Journal of Psychology, n/a(n/a). https://doi.org/10.1111/bjop.12715

Avancini, C., Ciria, L. F., Alameda, C., Palenciano, A. F., Canales-Johnson, A., Bekinschtein, T. A., & Sanabria, D. (2023). High arousal disrupts the neural signatures of conflict processing but not behavioural performance (p. 2023.07.31.550835). bioRxiv. https://doi.org/10.1101/2023.07.31.550835

Ciria, L. F., Román-Caballero, R., Vadillo, M. A., Holgado, D., Luque-Casado, A., Perakakis, P., & Sanabria, D. (2023). An umbrella review of randomized control trials on the effects of physical exercise on cognition. Nature Human Behaviour, 7(6), Article 6. https://doi.org/10.1038/s41562-023-01554-4

Holgado, D., & Sanabria, D. (2021). Does self-paced exercise depend on executive processing? A narrative review of the current evidence. International Review of Sport and Exercise Psychology, 14(1), 130-153. https://doi.org/10.1080/1750984X.2020.1774915

UNIVERSIDAD DE GRANADA

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Master's Thesis (TFM) Topic of Research

Conceptual metaphors in mental representation

Principal Investigator(s): Julio Santiago
Web: http://www.ugr.es/local/santiago
e-mail: santiago@ugr.es
Room: 312 (Psychology Building)

Brief description of the project:

People systematically resort to concrete concepts when they need to think about abstract concepts. For example, we think that the future is in front of us and we move toward it, while we leave the past behind (even though past and future are located nowhere). Numbers are reasoned about as if they were located along a line, with small numbers on the left and large numbers on the right. Good things are bright, located in upper space, whereas bad things are dark and located in lower space. Moreover, right-handers associate good things with right space and bad with left space, but left-handers associate good with left. Our lab aims to understand how this kind of associations (called conceptual metaphors) are used to reason about those abstract concepts, used in processing tasks, and what are the factors that determine their flexibility and variability both within individuals as well as across cultural and subcultural groups.

Reference publications:

Callizo-Romero, C., Tutnjevic, S., Pandza, M., Ouellet, M., Kranjec, A., Ilic, S., Gu, Y., Göksun, T., Chahboun, S., Casasanto, D., & Santiago, J. (2022). Does time extend asymmetrically into the past and the future? A multitask cross-cultural study. *Language and Cognition*, *14,* 275-302.

Callizo-Romero et al. (2020). Temporal focus and time spatialization across cultures. *Psychonomic Bulletin and Review, 27,* 1247-1258.

Damjanovic, L., & Santiago, J. (2016). Contrasting vertical and horizontal representations of affect in emotional visual search. *Psychonomic Bulletin & Review, 23,* 62-73.

De la Fuente et al. (2014). When you think about it, your past is in front of you: How culture shapes spatial conceptions of time. *Psychological Science, 29,* 1682-1690.

De la Fuente et al. (2015). Can culture influence body-specific associations between space and valence? *Cognitive Science, 39,* 821-832.

Román, A., Flumini, A., Lizano, P., Escobar, M., & Santiago, J. (2015). Reading and writing direction causes spatial biases in mental model construction in language understanding. *Scientific Reports,* 5:18248. doi: 10.1038/srep18248

Santiago et al. (2007). Time (also) flies from left to right.
Psychonomic Bulletin & Review, 14, 512-516.

Master's Thesis (TFM) Topic of Research

Craving and compulsivity in problematic gambling and video gaming

Principal Investigator: José César Perales

Web: https://orcid.org/0000-0001-5163-8811

e-mail: jcesar@ugr.es

Room: 311 (Psychology Building)

Brief description of the project:

In the last years, research on behavioral addictions has flourished, and problematic behaviors like excessive or dysregulated gambling, video gaming, pornography use, or social networking have been categorized as "addictive". Unfortunately, in spite of the increasing number of publications on these putative addictive disorders, and the instruments proposed to measure or diagnose them, very little is still known about their etiological cognitive and learning mechanisms, and whether or not these justify their shared consideration as addictions.

Our research line is aimed at investigating the role *craving* and *compulsivity* play in addictive disorders, their learning mechanisms, and their presence (or absence) in problematic gambling and video gaming. This could help establish delimitation criteria with important implications for the understanding of behavioral addictions and their treatments.

Representative publications:

Perales, J. C., King, D. L., Navas, J. F., Schimmenti, A., Sescousse, G., Starcevic, V., ... & Billieux, J. (2020). Learning to lose control: A process-based account of behavioral addiction. *Neuroscience & Biobehavioral Reviews, 108,* 771-780.

Flayelle, M., Brevers, D., King, D. L., Maurage, P., Perales, J. C., & Billieux, J. (2023). A taxonomy of technology design features that promote potentially addictive online behaviours. *Nature Reviews Psychology, 2(3),* 136-150.

Master's Thesis (TFM) Topic of Research

Developmental psychobiology in rodents.

Principal Investigators: Milagros Gallo; Fernando Gámiz
Web: http://neplegroup.com/
e-mail: mgallo@ugr.es
Room: 330 (Psychology Building)

Brief description of the project:
Various behavioral tasks are applied in rodents in order to investigate the effect of the brain organization changes on cognition over the life span, as well as the effect of different treatments at early prenatal/postnatal stages on later life. Among other learning tasks we use taste recognition memory as a choice model to study the brain circuits and molecular mechanisms involved in the neophobic response to the novel taste and its attenuation after repeated presentations. The response to novel and familiar tastes changes along the life thus evidencing different patterns of neural activity, such as those characteristic of adolescence and aging. The proposed project is centered in studying the brain activity related with recognition memory in rats by applying immunohistochemistry techniques to identify the protein c-Fos which is the product of the immediate early gene c-fos expression and a marker of neuronal activity. The project will consist in counting the number of c-Fos positive cells in the already stained available brain sections of either adolescent or aged rats. The additional possibility of participating in ongoing experiments performed by the research team at the Center for Biomedical Reaserch (CIBM. PTS) will depend on the timing and student availability.

Representative publications:

Expósito, A. N., Morillas, E., Gómez-Chacón, B., & Gallo, M. (2020) Prefrontal Cortex Activity Patterns During Taste Neophobia Habituation in Adult and Aged Rats. *Behavioural Brain Research*, 392, 112717. doi: 10.1016/j.bbr.2020.112717.

Gallo, M. (2018). Taste Neophobia over the Life Span (Chapter 3). En S. Reilly (Ed.), *Food Neophobia. Behavioral and Biological Influences* (pp. 25-41). Elsevier: San Diego (USA).

Grau-Perales A., Gómez-Chacón B., Morillas E., & Gallo M. (2019). Flavor recognition memory related activity of the posterior piriform cortex in adult and aged rats. *Behavioural Brain Research*, *360*, 196-201. doi: 10.1016/j.bbr.2018.12.016.

Master's Thesis (TFM) Topic of Research

Decoding brain representations of visible and invisible perceptual stimuli

Principal Investigator: Ana B. Chica, José A. González
Web: https://blogs.ugr.es/attentionandconsciousness/
e-mail: anachica@ugr.es
Room: Ana Chica: 381 Fac. Psicología

Brief description of the project:

The debate on how consciously (and unconsciously) perceived stimuli are processed in the brain has been going on for the last decades. Recent developments in neuroimaging analysis, together with the use of machine learning techniques and multivariate pattern analysis (MVPA), have helped to better understand these processes. Previous studies have shown that it is possible to decode the presence or absence of perceptual stimuli, its conscious or unconscious perception, as well as other relevant and irrelevant features of the stimuli (King et al., 2016; List et al., 2017). We have replicated some of these findings in the lab, and in this project, we aim to develop an online decoding analysis to try to detect erroneous responses online, generating a closed-loop feedback system to improve perception in healthy participants. The findings from this study would offer valuable insights into the neural representation of conscious and non-conscious information, with potential practical applications beyond the confines of the laboratory. These applications extend to everyday life scenarios, benefiting both healthy individuals and patients with brain damage suffering attentional and perceptual deficits.

Representative publications:

King, J.-R., Pescetelli, N., & Dehaene, S. (2016). Brain Mechanisms Underlying the Brief Maintenance of Seen and Unseen Sensory Information. Neuron, 92(5), 1122–1134. https://doi.org/10.1016/j.neuron.2016.10.051

List, A., Rosenberg, M. D., Sherman, A., & Esterman, M. (2017). Pattern classification of EEG signals reveals perceptual and attentional states. PLOS ONE, 12(4), e0176349. https://doi.org/10.1371/journal.pone.017634

Line of Research for End of Master's Project (TFM)

Does bilingual experience determine cognitive control?

Principal Investigator(s): Pedro Macizo
Web: https://www.researchgate.net/profile/Pedro_Macizo
http://memory.ugr.es/member/pedro-macizo
e-mail: pmacizo@ugr.es
Room: 310 (Psychology Department)

Brief description of the project or research line in which the student would conduct the TFM:

There is considerable debate in the scientific literature as to whether knowing more than one language produces improvements in the way bilinguals handle conflict situations (e.g., interference situations). In fact, in our research group we have data in favor of the "bilingual advantage" when applying cognitive control while other evidence is against it. In this TFM we will evaluate the existence (or not) of this advantage in cognitive control associated with bilingualism and the factors that may be at the basis of these contrasting results.

Reference publication on the subject of the TFM:

In favor of the bilingual advantage:

Andras, F., M. Ángeles Ramos, & Macizo, P. (2023). The impact of bilingualism in within-language conflict resolution: An ERP study. *Frontiers in Psychology, 14:* 1173486. doi: 10.3389/fpsyg.2023.1173486

Against the bilingual advantage:

Bellegarda, M. A. P., & Macizo, P. (2021). Cognitive control and bilingualism: The bilingual advantage through the lens of dimensional overlap. *Frontiers in Psychology, 12*, 614849. https://doi.org/10.3389/fpsyg.2021.614849

Master's Thesis (TFM) Topic of Research

Early development of attention and self-regulation

Principal Investigator: Charo Rueda
Web: https://wpd.ugr.es/~labncd/
e-mail: rorueda@ugr.es
Room: 314 (Psychology Building), LabNCD (Lab 24, CIMCYC).

Brief description of the project:

Executive attention (EA) refers to the ability to direct and engage attention according to internal goals or intentions. The first signs of attention control are shown over orientation of attention and are observable from about the second half of the first year of life. Infants are able to disengage attention from an object in order to explore a different object, or to move attention to a location where they expect that something of interest is about to appear. In adults, EA is supported by a network of fronto-parietal structures that are functionally connected. The aim of our research is to trace the early development of this network at the brain and behavioral levels. For this purpose, over 150 infants have been recruited and are longitudinally followed from 6 to 24 months of age. In experimental sessions, infants perform different eye-tracking tasks in which attention control was examined with disengagement, shifting and visual sequence learning paradigms. Additionally, we record brain activity with a high-density EEG system in order to assess functional connectivity between fronto-parietal regions in different frequency bands. We aim at tracing the development of EA at the brain and behavior levels as well as studying individual differences in the early development of attention skills in relation to patterns of brain connectivity. In addition, we aim at examining the impact of diverse variables that might affect the early development of EA, such as home-environment, temperament, and the risk for developmental disorders involving attention.

Representative publications:

Conejero, A., Guerra, S., Abundis-Gutiérrez, A., & Rueda, M. R. (2016) Frontal theta activation associated with error detection in toddlers: Influence of familial socio-economic status. *Developmental Science*, 1-11; DOI: 10.1111/desc.12494

Conejero, A., & Rueda, M. R. (2018) Infant temperament and family socio-economic status in relation to the emergence of attention regulation. *Scientific Reports, 8(1),* 11232. doi: 10.1038/s41598-018-28831-x

Master's Thesis (TFM) Topic of Research

Emotion as a perceptual regulator: Fear and disgust as modulators of stimulus detection and discrimination

Principal Investigators: Juan Lupiáñez and Alberto Acosta
Web: http://neurocog.ugr.es/Sitio_web/Alberto_Acosta.html
http://neurocog.ugr.es/Sitio_web/Juan_Lupianez.html
e-mail: jlupiane@ugr.es, acosta@ugr.es
Room: 398, 313 (Psychology Building)

Brief description of the project:
The conceptualization of emotions as regulators of social interactions is well known, whereas their role as sensory regulators in extracting information from the environment is less well unknown. In this line of work, we test the hypothesis that fear and disgust modulate perception in different ways. While fear facilitates the detection of novel stimuli in the environment, treating each moment as something new, disgust enhances the integration of information across time, favoring discrimination. We use different methods to induce emotional states related to fear or disgust, and evaluate how these emotional states modulate performance in tasks measuring different aspects of perception (feature and object detection, spatial and temporal discrimination, etc), memory and decision making, in comparison to neutral or positive emotional states.

Representative publications:

Lee, D. H., Mirza, R., Flanagan, J. G., & Anderson, A. K. (2014). Optical Origins of Opposing Facial Expression Actions. *Psychological Science*. doi: 10.1177/0956797613514451.

Pacheco-Unguetti, A. P., Acosta, A., Callejas, A., & Lupiáñez, J. (2010). Attention and Anxiety: Different Attentional Functioning Under State and Trait Anxiety. *Psychological Science, 21*(2), 298-304. doi: 10.1177/0956797609359624.

Master's Thesis (TFM) Topic of Research

Endogenous and exogenous attentional orienting.

Principal Investigators: Elisa Martín-Arévalo, Fabiano Botta and Juan Lupiáñez
Web: http://neurocog.ugr.es/
e-mail: emartina@ugr.es / fabianobotta@ugr.es / jlupiane@ugr.es
Room: 381 (EMA) / 398 (JL) (Psychology Building)

Brief description of the project:
Over the last decade, we have dissociated voluntary from involuntary attentional orienting, systematically observing that – far from representing two ways of orienting a single attention mechanism – the represent two different attentional mechanisms, possibly with different functions and ways to operate. However, it is not clear exactly how the two types of attentional orienting interact to modulate behaviour. While a good operation of voluntary attention guaranties correct fulfilment of future goals, some involuntary distraction by irrelevant (for the future goals) but potentially crucial (e.gr. for present survival) salient/new events seems also necessary. For the appropriate functioning of the attentional system an equilibrium between the two systems seems necessary for an appropriate adaptation to the environment. In this line of research, we aim to further investigate the specific attentional mechanisms underlying both voluntary and involuntary attentional orienting by using behavioural measures, ERPs, fMRI, and/or TMS.

Representative publications:
Corbetta, M., Patel, G., & Shulman, G. L. (2008). The reorienting system of the human brain: from environment to theory of mind. *Neuron, 58*, 306-324.

Chica, A.B., Martín-Arévalo, E., Botta, F., & Lupiáñez, J. (2014). The Spatial Orienting paradigm: How to design and interpret spatial attention experiments. *Neuroscience & Biobehavioral Reviews*, *40*, 35-51

Martín-Arévalo, E., Botta, F., De Haro, V., & Lupiáñez, J. (2019). On the putative role of intervening events in exogenous attention. Psychological Research.

Martín-Arévalo, E., Chica, A.B., & Lupiáñez, J. (2016). No single electrophysiological marker for facilitation and inhibition of return: A review. *Behavioural brain research, 300*, 1-10.

Martín-Arévalo, E., Lupiáñez, J., Narganes-Pineda, C., G Marino, G., Colás, I, & Chica, A.B. (2019). The causal

role of the left parietal lobe in facilitation and inhibition of return. *Cortex, 117*, 311-322.

Master's Thesis (TFM) Topic of Research

Eye-Gaze Versus Arrows: a comparison to study Social Attention

Principal Investigators: Juan Lupiáñez and Andrea Marotta
Web: http://neurocog.ugr.es/Sitio_web/Juan_Lupianez.html
e-mail: marotta@ugr.es / jlupiane@ugr.es
Despacho: 398 / 381 (Psychology Building)

Brief description of the project:

The ability to accurately encode and attend other people's direction of attention (e.g., following eye gaze), is crucial in social communication. In particular the ability to correctly interpret and follow the direction of another individual's gaze serves as a foundation for more sophisticated social skills such as a theory of mind, language acquisition and cultural learning. However, there have been and there is still a debate in the literature as to whether gaze stimuli are "special" in terms of the attentional processes engaged, in comparison to other non-social directional stimuli. Recently we have been able to show both shared and dissociable attentional components between gaze and arrow stimuli, suggesting the existence of a social-specific dimension exclusively involved in gaze processing.

At the moment we are carrying out several lines of research with Behavioural and Cognitive Neuroscience (EEG, fMRI, TMS) methods to investigate the underlying mechanisms by which gaze is processed as a special social attentional stimulus.

Representative publications:

Marotta, A., Lupianez, J., Martella, D., & Casagrande, M. (2012). Eye gaze versus arrows as spatial cues: Two qualitatively different modes of attentional selection. J *Exp Psychol Hum Percept Perform, 38*(2), 326-335.

Marotta, A., Román-Caballero, R., & Lupiáñez, J. (2018). Arrows don't look at you: Qualitatively different attentional mechanisms triggered by gaze and arrows. *Psychonomic Bulletin & Review*. doi:10.3758/s13423-018-1457-2

Marotta, A., Lupiáñez, J., Román-Caballero, R., Narganes-Pineda, C., & Martín-Arévalo, E. (2019). Are eyes special? Electrophysiological and behavioural evidence for a dissociation between eye-gaze and arrows attentional mechanisms. *Neuropsychologia*, 129, 146-152.

Master's Thesis (TFM) Topic of Research

Formation and Temporal Evolution of Memory Traces in One-Shot Learning

Principal Investigator: Carlos González and Juan Linde

Web: https://ugr.es/~cgonzalez

e-mail: cgonzalez@ugr.es ; lindedomingo@ugr.es

Room: 303 and 308 (CIMCYC)

Brief description of the project:

Rapid, one-shot learning describes the phenomenon in which robust memory traces are acquired after a single encounter with a stimulus (Piette et al., 2020). One prominent example of one-shot learning comes from the perceptual domain. When first encountered, ambiguous black-and-white images, so called Mooney images, are perceived as meaningless black and white blobs. Suddenly, they become meaningful after viewing the original unambiguous version of the image, or after some time exploring the image. Surprisingly, despite the short learning episode, the acquired memory traces are very long lasting, as people can still identify the object in the Mooney image after several weeks or even months (Ludmer et al., 2011; Squire et al., 2021). However, how different memory systems contribute to such long lasting effects remains poorly understood. Therefore, this project seeks to understand the contribution of episodic memory, restructuring of the semantic network, and perceptual memory to learning from insight-like events (see Becker & Cabeza, 2024).

Representative publications:

Becker, M., & Cabeza, R. (2024). Prediction error minimization as a common computational principle for curiosity and creativity. *Behav. Brain Sci*, 1-4.

Ludmer, R., Dudai, Y., & Rubin, N. (2011). Uncovering camouflage: amygdala activation predicts long-term memory of induced perceptual insight. *Neuron*, *69*(5), 1002-1014.

Piette, C., Touboul, J., & Venance, L. (2020). Engrams of fast learning. *Frontiers in cellular neuroscience*, *14*, 575915.

Squire, L. R., Frascino, J. C., Rivera, C. S., Heyworth, N. C., & He, B. J. (2021). One-trial perceptual learning in the absence of conscious remembering and independent of the medial

temporal lobe. *Proceedings of the National Academy of Sciences*, *118*(19), e2104072118.

Master's Thesis (TFM) Topic of Research

Hazard Prediction and Risky Decision Making implemented in PC, APPs, 3D-Goggles, Elumens Vision Station for drivers screening and training purposes.

IP: Cándida Castro

Web: www.ugr.es/~candida

e-mail: candida@ugr.es

Room: 208 (Psychology Building)

Brief description of the project:

We propose now to develop an Hazard Prediction test implemented in Virtual Reality (VR, to compare its efficacy for evaluation and training with respect to the traditional test implemented with a PC or APPs, since the HP test implemented with a PC and simulators lacks the capacity to elicit emotions similar to those produced in real driving. The training programmes that might allow road users to be exposed to risky situations that have a low level of occurence in real settings, improving their ability to detect them and acquire the skills needed to respond in a safe way. The most effective programmes will be implemented in VR y APPs. We will analyse the effect of:

1) Practice- 2) Proactive instructive commentaries. 3) Feedback. 4) Accident Analysis. 5) Short / long-term training.

Representative publications:

Castro, C., Doncel, P., Dinu, A.I. & Padilla, F. (2023). Strong predictors of offender drivers: drug and alcohol addiction and the inability to dissociate binge alcohol or drug consumption from driving. Revoking their driver's licence may not be enough. *Transportation Research Part F. Traffic Psychology & Behaviour, 92,* 337-352 DOI: 10.1016/j.trf.2022.12.002 ISSN: 1369-8478 Q2 IF: 4.349

Castro, C., Muela, I., Doncel, P. & Garcia-Fernandez, P. (2020). Hazard Perception and Prediction test for walking, riding a bike and driving a car: "Understanding of the global traffic situation". PLoS ONE 15(10): e0238605, DOI: 10.1371/journal.pone.0238605

Castro, C., Ventsislavova, P., García-Fernandez, P. & Crundall, D. (2021). Risky Decision Making and Hazard Prediction are negatively related and could be assessed independently using driving footage. *Psychology*

Research and Behavior Management, 14, 857-876 DOI: 10.2147/PRBM.S305979

Muela I, Chica A, Garcia-Fernandez P, & Castro C. (2021). Visual attention in realistic driving situations: Attentional capture and Hazard Prediction. *Applied Ergonomics*, 89, 103235. DOI: 10.1016/j.apergo.2020.103235

Ventsislavova, P., Crundall, D., García-Fernández, P. & Castro, C., (2021). Assessing willingness to engage in risky driving behaviour using naturalistic driving footage: the role of age and gender. *International Journal of Environmental Research and Public Health*, 18 (19): 10227. DOI: 10.3390/ijerph181910227

UNIVERSIDAD DE GRANADA

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Line of Research for End of Master's Project (TFM)

How to Improve Foreign Language Acquisition

Principal Investigators: Pedro Macizo, Ana B. García-Gámez, & Melodie Bellegarda
Web: https://www.researchgate.net/profile/Pedro_Macizo
http://memory.ugr.es/member/pedro-macizo
e-mail: pmacizo@ugr.es
Room: 310 (Psychology Department)

Brief description of the project or research line in which the student would conduct the TFM:

In this line of research, we compare different ways to learn words in a second language (L2). In particular, we evaluate L2 vocabulary acquisition based on semantic processing (i.e., tasks that involve the accessing to the meaning of words) and tasks that emphasize lexical processing. In addition, we study the role of gestures and sounds in word acquisition (e.g., the gesture of making a call when learning the word "phone" in L2). Furthermore, we address the effect of learning principles on vocabulary acquisition (the way of receiving the training sessions, etc.). To index vocabulary acquisition, we use behavioural (i.e., memory recall of L2 words) and electrophysiological markers (event-related indexes of semantic processing of new L2 words, i.e., N400).

Reference publication on the subject of the TFM:

Semantic vs. Lexical L2 learning:

García-Gámez, A. B., & Macizo, P. (2022). Lexical and semantic training to acquire words in a foreign language: An electrophysiological study. *Bilingualism: Language and Cognition, 25(5), 768-785.* https://doi.org/10.1017/S1366728921000456

The role of gestures on L2 learning:

García-Gámez, A., Cervilla, O., Casado, A., & Macizo, P. (2021). Seeing or acting? The effect of performing gestures on foreign language vocabulary learning. *Language Teaching Research,* https://doi.org/10.1177/13621688211024364

Master's Thesis (TFM) Topic of Research

Interference inhibition and memory control

Principal Investigators: Teresa Bajo & Alejandra Marful
Web: http://www.ugr.es/ex.html
e-mail: mbajo@ugr.es; marful@ugr.es
Room: 212 (Psychology Building)

Brief description of the project:
Inhibition has been proposed as a mechanism in charge of preventing cognition from interference situations. This mechanism facilitates access to information stored in long term memory and the updating of the contents of working memory. Our research is mainly focused on studying the nature of this inhibitory mechanism by using retrieval practice, directed forgetting and updating tasks, and on understanding how efficiency of inhibitory processing and vulnerability to interference changes across the life span. We are also investigating these processes in some clinical populations such as schizophrenic patients, and patients with bipolar disorders. The experimental methodology used in our research team ranges from behavioural analyses (reaction times and response accuracy) to eye-tracking monitoring and recording of brain activity (EEG and FMRi).

Representative publications:

Ortega, A., Gómez-Ariza, C.J., Román, P.E., & Bajo, M.T. (2012) Memory inhibition, aging and the executive deficit hypothesis. *Journal of Experimental Psychology: Learning, Memory & Cognition, 38*, 178-186.

Anderson, M.C., & Huddleston, E. (2011). Towards a Cognitive and Neurobiological Model of Motivated Forgetting. In Belli, R. F. (Ed.), *True and false recovered memories: Toward a reconciliation of the debate. Vol. 58*: Nebraska Symposium on Motivation. New York: Springer.

Master's Thesis (TFM) Topic of Research

Learning from memory errors

Principal Investigators: María Jesús Maraver & Mª Teresa Bajo
Web: https://www.memoryugr.es/people/ma-jesus-maraver/
e-mail: mjmaraver@ugr.es
Room: 317 (CIMCYC)

Brief description of the project: Decades of research in experimental psychology and cognitive neuroscience demonstrate that human memory is remarkably efficient but, because of its reconstructive nature, it can be fallible. This line aims to investigate the cognitive and neural mechanisms that come into play for the correction of memory errors, using experimental paradigms for the study of false memories. The research can focus on healthy younger or older adults, contributing to the development of scientifically based interventions to promote healthy aging. This project expects to advance knowledge on the brain-cognition relationship in learning from errors by studying populations at different stages of development (younger and older adults) and the combination of behavioral, correlational (EEG), and causal (neuromodulation) research methods.

Representative publications:

Brady, T. F., Robinson, M. M., Williams, J. R., & Wixted, J. T. (2023). Measuring memory is harder than you think: How to avoid problematic measurement practices in memory research. Psychonomic Bulletin & Review, 30(2), 421-449.

Ferreira, C. S., Maraver, M. J., Hanslmayr, S., & Bajo, T. (2019). Theta oscillations show impaired interference detection in older adults during selective memory retrieval. Scientific reports, 9(1), 9977.

Maraver, M. J., Lapa, A., Garcia-Marques, L., Carneiro, P., & Raposo, A. (2022). Can we learn from errors? Retrieval facilitates the correction of false memories for pragmatic inferences. Plos one, 17(8), e0272427.

Metcalfe, J. (2017). Learning from errors. Annual review of psychology, 68(1), 465-489.

Master's Thesis (TFM) Topic of Research

Light for Sleep

Principal Investigator: Ángel Correa Torres
Web: http://www.ugr.es/%7Eact/act/index.html
e-mail: act@ugr.es
Room: 211 (Psychology Building)

Brief description of the project:

The natural daylight-darkness cycle of Earth rotation regulates our circadian rhythm of sleep/wakefulness. However, in modern everyday life humans increasingly spend more time indoors, replacing natural light by artificial electric light and adopting nocturnal life modes for work or leisure activities. These habits are decreasing both the quality and duration of human exposure to light (the most important synchroniser of our circadian rhythms), producing chronodisruption and sleep disorders. Epidemiological studies show that chronodisruption is related to an increased incidence of metabolic syndrome, cardiovascular diseases, some cancer types, aging, cognitive impairment and affective disorders.

If we want to address the problem of insufficient sleep and chronodisruption we should work on strategies to promote sleep at the right time of day. **The current project aims to understand the mechanism by which changes in spectral composition and intensity of light can regulate arousal and sleep through the circadian system**.

We will specifically test whether evening exposure to a simulated dusk lighting can decrease arousal and enhance subsequent sleep quality and duration. Our hypothesis assumes that the most powerful lighting conditions to regulate arousal and circadian rhythms should simulate the dramatic changes in intensity and spectral composition associated to the Earth rotation that naturally cues the two critical times of day at dawn and dusk.

Representative publication:

Rodríguez-Morilla, B, Madrid J.A., Molina, E., Pérez-Navarro, J., & Correa, A. (2018). Blue-enriched light enhances alertness but impairs accurate performance in evening chronotypes driving in the morning. PDF

Master's Thesis (TFM) Topic of Research

Motivation, anxiety and cognitive control: The role of the affective content and learning about uncertainty

Principal Investigators: Juan Lupiáñez, Alberto Acosta & Marcin Bukowski
Web: http://neurocog.ugr.es/Sitio_web/Alberto_Acosta.html
http://neurocog.ugr.es/Sitio_web/Juan_Lupianez.html
e-mail: jlupiane@ugr.es, acosta@ugr.es, marcin@ugr.es
Room: 398 (JL), 313 (AA) (Psychology Building)

Brief description of the project:
Previous studies have shown that people with high trait anxiety (or people induced lack of control) show greater interference by distracting stimuli, compared to people who score low on trait anxiety questionnaires such as the STAI (Bishop, 2009; Pacheco-Unguetti, Acosta, Callejas y Lupiáñez, 2010) or those who are induced a sense of control (Bukowski, Asanowicz, Marzecová, & Lupiáñez, 2015). These results have been observed when neutral material (without affective content) is used in the interference task. However, other studies have shown that this effect is not observed when affective material is manipulated in the task measuring cognitive control (Pacheco-Unguetti, 2010). An important objective of this line of research is the systematic study of the presence-absence of affective content, as a determining factor in the observation of greater interference associated with high trait anxiety and participants experience lack of control.

Representative publications:

Bukowski, M., Asanowicz, D., Marzecová, A., & Lupiáñez, J. (2015). Limits of control: The effects of uncontrollability experiences on the efficiency of attentional control. *Acta Psychologica, 154*, 43–53. https://doi.org/10.1016/j.actpsy.2014.11.005

Bishop, S. J. (2009). Trait anxiety and impoverished prefrontal control of attention. *Nat Neurosci, 12*(1), 92-98.

Pacheco-Unguetti, A. P. (2010). *Anxiety, Cognitive control and processing styles.* Unpublished Doctoral Thesis, Universidad de Granada, Granada.

Pacheco-Unguetti, A. P., Acosta, A., Callejas, A., & Lupiáñez, J. (2010). Attention and Anxiety: Different Attentional Functioning Under State and Trait Anxiety. *Psychological Science, 21*(2), 298–304.

Master's Thesis (TFM) Topic of Research

Neural coding of information for proactive cognitive control

Principal Investigator: María Ruz

Web: https://wpd.ugr.es/~humneuro/

e-mail: mruz@ugr.es

Room: 4 (CIMCYC)

Brief description of the project:

It is common lay knowledge that preparing in advance improves the efficiency of behavior. Why and how this happens, however, is still far from being understood. One of the research fields that can provide valuable insights to advance this knowledge is the study of information coding in the human brain. The present project will test the overarching hypothesis that anticipatory activations reflect a form of internal control of brain circuit dynamics that brings cortical states closer to the representational subspace that matters for the upcoming task. We will employ tailored behavioral paradigms with functional magnetic resonance (fMRI) and electroencephalography (EEG) neuroimaging combined with several multivariate analyses to investigate the spatio-temporal dynamics of the neural codes underlying advance preparation in the human brain. Overall, we aim to provide mechanistic explanations for proactive control processes that could help unifying evidence from several domains where preparation is key for success.

Representative publications:

López-García, D., Peñalver, J. M., Górriz, J. M., & Ruz, M. (2022). MVPAlab: A Machine Learning decoding toolbox for multidimensional electroencephalography data. *Computer Methods and Programs in Biomedicine 214*:106549.

Palenciano, A. F., González-García, C., Arco, J. E., Pessoa, L. & Ruz, M. (2019) Representational organization of novel task sets during proactive encoding. *Journal of Neuroscience 39(42)*:8386-8397.

Peñalver, J. M., López-García, D., González-García, C., Aguado-López, B., Górriz, J. M., & Ruz, M. (2023). Top-down specific preparatory activations for selective attention and perceptual expectations. *NeuroImage, 271*, 119960.

Master's Thesis (TFM) Topic of Research

Neural mechanisms behind perception and memory transformation

Principal Investigator: Juan Linde-Domingo, Javier Ortiz-Tudela, and Carlos González-García

e-mail: lindedomingo@ugr.es / ortiztudela@ugr.es / cgonzalez@ugr.es

Room: JLD and JOT: 308 (CIMCYC); CGG: 303 (CIMCYC)

Brief description of the project: Despite significant effort, how exactly memories of past events are stored in patterns of brain activity remains poorly understood. Similarly, how these traces are integrated in existing memory schema to impact future perception remains unknown. Here, we aim to explore, first, the exact nature of memory traces and its resemblance (or lack thereof) to the encoding episode. Second, we will explore the long-term fate of such traces to test the hypothesis that time will upweight abstract information of the encoding episode, compared to concrete information.

Representative publications:

González-García, C., Flounders, M. W., Chang, R., Baria, A. T., & He, B. J. (2018). Content-specific activity in frontoparietal and default-mode networks during prior-guided visual perception. *eLife*, *7*, e36068.

Linde-Domingo, J., Treder, M. S., Kerrén, C., & Wimber, M. (2019). Evidence that neural information flow is reversed between object perception and object reconstruction from memory. Nature communications, 10(1), 179.

Ortiz-Tudela, J., Bergmann, J., Bennett, M., Ehrlich, I., Muckli, L., & Shing, Y. L. (2023). Concurrent contextual and time-distant mnemonic information co-exist as feedback in the human visual cortex. Neuroimage, 265, 119778.

Master's Thesis (TFM) Topic of Research

Neural mechanisms underlying the influence of prior knowledge on visual perception

Principal Investigator: Carlos González and María Ruz

Web: https://ugr.es/~cgonzalez/

e-mail: cgonzalez@ugr.es

Room: 303 (CIMCYC)

Brief description of the project:

A fundamental question in neuroscience is how prior knowledge shapes perceptual processing. Perception is constantly informed by internal priors in the brain acquired from past experiences, but the neural mechanisms underlying this process are poorly understood. While knowledge about the world is usually acquired via repeated encounters, the Mooney disambiguation effect is a commonly known example of one-shot perceptual learning. Mooney images are ambiguous two-tone images which are, without additional information, devoid of meaning for the perceiver. However, after a single exposure to the corresponding unambiguous original image, the content of the Mooney images becomes readily available. In previous studies, we have shown the involvement of higher-order brain networks in such disambiguation process, but their specific role remains unknown. In this project, we will further refine behavioral metrics of one-shot perceptual learning recently developed in our lab, with the ultimategoal of combining them with neuroimaging techniques to characterize the contribution of different brain networks.

Representative publications:

González-García, C., & He, B. J. (2021). A gradient of sharpening effects by perceptual prior across the human cortical hierarchy. Journal of Neuroscience, 41(1), 167-178.

González-García, C., Flounders, M. W., Chang, R., Baria, A. T., & He, B. J. (2018). Content-specific activity in frontoparietal and default-mode networks during prior-guided visual perception. Elife, 7, e36068.

UNIVERSIDAD DE GRANADA

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Master's Thesis (TFM) Topic of Research

Neuropsychology and Activities of daily living

Principal Investigator: Mª Jesús Funes Molina
Web:
https://www.ugr.es/~neurocog/Sitio_web/Neuropsychology_And_Everyday_Activities.html
e-mail: mjfunes@ugr.es
Room: 314 (Psychology Building)

Brief description of the project:
The goal of this line of research is to investigate how brain damage affects the adaptation of patients to their environment and what strategies might be effective to ameliorate their deficits. This line of research focus on cognitive abilities that impact activities of daily life (such as cleaning one's teeth or making breakfast).

Representative publications:

Rodríguez-Bailón, M., García-Morán, T., Montoro-Membila, N., Ródenas-García, E., Montoro, M. A., & Funes Molina, M. J. (2017). Positive and Negative Consequences of Making Coffee among Breakfast Related Irrelevant Objects: Evidence from MCI, Dementia, and Healthy Ageing. *Journal of the International Neuropsychological Society, 23*(6), 481–492. https://doi.org/10.1017/S135561771700025X

Rodríguez-Bailón, M., Montoro-Membila, N., Garcia-Morán, T., Arnedo-Montoro, M. L., & Molina, M. J. F. (2015). Preliminary cognitive scale of basic and instrumental activities of daily living for dementia and mild cognitive impairment. *Journal of Clinical and Experimental Neuropsychology, 37*(4), 339–353. https://doi.org/10.1080/13803395.2015.1013022

Master's Thesis (TFM) Topic of Research

Network reorganization and compensatory processes after TMS neuromodulation

Principal Investigator: Mar Martín Signes y Ana B Chica Martínez

Web: https://blogs.ugr.es/attentionandconsciousness/

e-mail: msignes@ugr.es

Room: Mar: 327 (CIMCYC), Ana: 381 (Psychology Building).

Brief description of the project: The human brain orchestrates a network reorganization in response to disturbances in the normal functioning of a node using neuromodulation techniques, such as transcranial magnetic stimulation (TMS). Such neural reorganization is reflected in changes in activation or functional connectivity not only in the stimulated area but also within and between broader brain networks. These TMS-induced network changes may reflect compensatory processes triggered to adapt to the system disruption. As such, they could be functionally relevant in explaining TMS effects on behavior or cognition. Both, brain reorganization and compensation are leaded by the functional and structural connectivity between regions, although the extent of the contribution of each type of node communication remains unclear. Notably, baseline functional connectivity and structural connections properties exhibit considerable individual differences, suggesting significant variability in neural responses to TMS and its behavioral impact. This research project aims to address these questions through the combination of techniques such as TMS and functional magnetic resonance imaging (fMRI), and experimental psychology paradigms. It aim to investigate the behavioral and neural effects of the TMS-induced disruption of a network node, examining resting-fMRI for brain reorganization, and task-based fMRI to explore compensatory processes. In addition, it aims to establish the causal role of neural reorganization by disrupting a second functionally relevant node, further exploring its compensatory effects. Throughout both aims, we will explore the influence of functional and structural connectivity, utilizing diffusion-weighted imaging (DWI) to assess the latter, while considering individual variability. This project centers on the dorsal attention network and its behavioral implications in visuospatial attention.

Representative publications:

Bassett, D., Sporns, O. (2017) Network neuroscience. Nat Neurosci 20, 353–364. doi: 10.1038/nn.4502

Gallotto S, Schuhmann T, Duecker F, Middag-van Spanje M, de Graaf TA, Sack AT. (2022) Concurrent frontal and parietal network TMS for modulating attention. iScience. 22;25(3):103962. doi: 10.1016/j.isci.2022.103962.

Hartwigsen G. (2018) Flexible Redistribution in Cognitive Networks. Trends Cogn Sci. (8):687-698. doi: 10.1016/j.tics.2018.05.008

Master's Thesis (TFM) Topic of Research

Orienting of attention to space and time

Principal Investigator: Ana B. Chica & Mariagrazia Capizzi

Web: https://blogs.ugr.es/attentionandconsciousness/

e-mail: anachica@ugr.es; mgcapizzi@ugr.es

Room: 381 (Facultad de Psicología)

Brief description of the project:

Adaptive behavior requires the ability to selectively attend to *where* in space and *when* in time a relevant event might occur. Although a relation between spatial and temporal attention can be easily envisaged in many everyday scenarios, from safely crossing a busy intersection to quickly reacting to a falling object, the two attention types have been mostly studied as separate systems. Understanding whether, and under which conditions, spatial and temporal attention operate independently or interactively has, however, important theoretical and applied implications. On the one hand, a deeper knowledge of the relation between spatial and temporal attention could inform future cognitive and computational models of how the brain handles different attention types. On the other hand, advances in the domains of spatial and temporal attention might be exploited in those scenarios, such as driving or aircraft flying settings, whereby attending to both space and time is of outmost importance for survival. To address the relation between spatial and temporal attention, we devise targeted experimental protocols entailing attention to both dimensions. Neuroimaging (e.g., EEG/fMRI) methods are also employed to elucidate the neural correlates of combined spatial and temporal attention.

Representative publications:

Capizzi, M., & Correa, Á. (2018). Measuring temporal preparation. In A. Vatakis, F. Balci, M. Di Luca, & Á. Correa (Eds.). *Timing and time perception: Procedures, measures, and applications*. Ed. Brill, Leiden Boston, pp. 216-232.

Chica, A. B., Bartolomeo, P., & Lupiáñez, J. (2013). Two cognitive and neural systems for endogenous and exogenous spatial attention. *Behavioural Brain Research, 237*, 107-123.

Chica, A. B., Martín-Arévalo, E., Botta, F., & Lupiáñez, J. (2014). The Spatial Orienting paradigm: how to design and interpret spatial attention experiments. *Neuroscience and Biobehavioral Reviews, 40*, 35–51.

Rohenkohl, G., Gould, I. C., Pessoa, J., & Nobre, A. C. (2014). Combining spatial and temporal expectations to improve visual perception. *Journal of Vision, 14*(4):8, 1-13.

Master's Thesis (TFM) Topic of Research

Perceptual Learning in Animals and Humans: Comparison and Salience Modulation

Principal Investigator: Isabel de Brugada Sauras
Web: http://www.ugr.es/~neple/members_isabelbrugada.htm
e-mail: dbrugada@ugr.es
Room: 211 (Psychology Building)

Brief description of the project:

Perceptual Learning refers to a phenomenon that occurs when discrimination between two similar stimuli is faciltated by prior experience with those stimuli. This phenomenon has been studied using both human and non-human subjects and it is assumed that the basic perceptual and learning mechanisms are general for both cases. However, some instances of perceptual learning, are incompatible with these general principles and seem to be obtained only with humans. Findings from studies with human subjects suggest that, as Gibson (1956) proposed, stimulus comparison is critical for perceptual learning. When animals are used as subjects, the standard procedure that is routinely used does not favour stimulus comparison, and when manipulations are put in place in order to aid comparison, the results are rather ambiguous. The discrepancies between the results obtained with human and non-human animals could be due to some procedural differences. The aim of the present project is to conduct a series of experiments using non-human subjects with procedures that allow us to show that the comparison process also plays a role when these animals are used as subjects. In addition, we aim to run a series of experiments with human animals as subjects in order to rule out an explanation in terms of discrimination learning. It is then hoped that the general mechanisms of comparison and salience modulation might be integrated into existing associative theories in order to provide a complete explanation of perceptual learning phenomena.

Representative publications:

Mitchell, C., & Hall, G. (2014). Can theories of animal discrimination explain perceptual learning in humans? *Psychological Bulletin*, *140*, 283-307.

Recio, S, Iliescu, A., & de Brugada, I. (2018). The role of stimulus comparison in animal perceptual learning: Effects of a distractor placement. *Quarterly Journal of Experimental Psychology*.

Recio, S. A., Iliescu, A. F., & de Brugada, I. (2019). The amount of exposure determines generalization in

animal perceptual learning using short inter-stimulus intervals. *Behavioural Processes, 166*, 103900.

Master's Thesis (TFM) Topic of Research

Persistence of incentive salience

Principal Investigator: Felisa González
Web: https://sites.google.com/site/ugrled/people/senior-researchers/felisa-gonzalez-reyes
e-mail: fgreyes@ugr.es
Room: 311 (Psychology Building)

Brief description of the project:

Environmental signals paired with the occurrence of valuable outcomes (rewards) acquire incentive value through associative learning processes (Pavlovian conditioning) and can bias choice behavior toward seeking responses that share the same outcome. These signals may be informative, guiding action selection by signaling the availability of the outcome in a goal-directed manner, or they may trigger strong attentional and motivational responses toward the signal itself, even if this makes obtaining the outcome less likely (incentive salience, leading to reflexive, automatic, habit-like responses). Individuals differ in the extent to which they react to the cue as a signal of the outcome (goal-trackers) or as a stimulus with incentive salience (sign-trackers). In the latter case, problems in updating the signal's predictive value as well as the outcome's incentive value may arise. We investigate these issues through VMAC (value-modulated attentional capture) and PIT (Pavlovian to instrumental transfer) effects. Further, we are interested in linking these updating failures to individual differences in affective impulsivity and emotion dysregulation.

Representative publications:

Garre-Frutos et al. (2024). On the reliability of value-modulated attentional capture: An online replication and multiverse analysis. Behavioral Research Methods. https://doi.org/10.3758/s13428-023-02329-5

Hinojosa-Aguayo, I., & González, F. (2020). Affect-driven impulsivity impairs human action control and selection, as measured through Pavlovian instrumental transfer and outcome devaluation. Quarterly Journal of Experimental Psychology, 73,537-554. https://doi.org/10.1177/1747021819883963

Line of Research for End of Master's Project (TFM)

Persons with High Sensitivity and Neurocognition: Perception, Language and Math.

Principal Investigator(s): Pedro Macizo
Web: https://www.researchgate.net/profile/Pedro_Macizo
http://memory.ugr.es/member/pedro-macizo
e-mail: pmacizo@ugr.es
Room: 310 (Psychology Department)

Brief description of the project or research line in which the student would conduct the TFM:

Highly Sensitive Person (HSP) (Aron & Aron, 1997) defines people with a special personality trait or character for coping with/understanding the world around them, such as, for example, a greater susceptibility to experience emotions, greater tendency to analyze details of the environment, greater creativity, and a greater likelihood of feeling overwhelmed or overwhelmed due to close analysis of environmental stimuli. This results in overstimulation and a greater tendency to experience environmental stress and cognitive destabilization. Specifically, Aron and Aron indicates that a PAS person presents: (a) deeper processing of sensory information and self-awareness (introspection, rumination), (b) greater emotionality and empathy in sharing the feelings of the people around them, (c) greater sensitivity to subtleties (details of the environment), (d) greater creativity, and (e) greater sensory overstimulation and mental saturation. The starting hypothesis of this research is to demonstrate, for the first time (to our knowledge), that a given processing style (i.e., persons with more/less sensitivity, HSP) determines how they process three specific neurocognitive domains (i.e., perception, language, and mathematics).

Reference publication on the subject of the TFM:

Aron, E. N., & Aron, A. (1997). Sensory-processing sensitivity and its relation to introversion and emotionality. *Journal of Personality and Social Psychology, 73(2), 345–368.* https://doi.org/10.1037/0022-3514.73.2.345

Master's Thesis (TFM) Topic of Research

Rich but inaccurate: exploring the quality of perceptual experiences

Principal Investigator: Ana B Chica Martínez

Web: https://blogs.ugr.es/attentionandconsciousness/

e-mail: anachica@ugr.es

Room: Office 381, Faculty of Psychology

Brief description of the project: This project aims to explore the quality of perceptual experiences under different attentional conditions, while addressing one of the most significant confounds in the literature, namely, the performance confound. Historically, researchers have proposed that attention enhances perceptual consciousness; however, more recent studies have challenged this idea. It is now well established that not all types of attention improve consciousness, and our group has dedicated substantial research efforts to investigate which types of attention enhance perceptual consciousness and the neural mechanisms underlying these attentional improvements.

Nevertheless, a crucial confound in the study of consciousness has been relatively neglected in the literature. When we consciously perceive external stimuli, we generally respond better than when information is not consciously perceived. In general, when we do not perceive consciously, we either do not respond or respond randomly. However, performance and consciousness can be dissociated (in some instances, we may respond similarly when we consciously perceive or not, such as when walking and avoiding obstacles while we are distracted looking at our phone). Therefore, it is possible that through attention improvements on performance, perceptual consciousness is enhanced. When performance has been experimentally matched for endogenously attended and unattended locations, changes in response criteria have been observed, with a more liberal response criterion for unattended that attended positions (see Rahnev et al., 2011). The more liberal criterion observed at unattended locations has been related to our impression of seeing more than we can report in conditions of absent attention.

This project aims to replicate and extend Rahnev et al. (2011) results when manipulating endogenous attention, as well as exploring attentional modulations that occur when matching performance with other attentional systems such as exogenous attention and alerting. This is important because, given the multifaceted nature of attention, the results in one attentional modality do not necessarily generalize to other

attentional modalities. Specifically, the series of experiments that we propose aims at exploring changes in decision criteria, response confidence, appearance, and the perceptual richness of attended and unattended stimuli. In the final phase of this project, we propose to conduct a neuroimaging study to gain insights into the brain representations of conscious information under different attentional conditions. When performance is not matched, it is well-known that attention amplifies the processing of information at early-perceptual (P1) and late-decisional (P3) stages of processing. However, where and how attention alters perceptual representations when performance is matched remains a key-unresolved question.

Representative publications:

Lau H (2022) In consciousness we trust (Oxford University Press).

Rahnev D, et al. (2011) Attention induces conservative subjective biases in visual perception. Nature Neuroscience 14(12):1513-1515.

Master's Thesis (TFM) Topic of Research

Risk perception and decision-making in different contexts: impulsivity, moral and affective effects

Principal Investigators: Antonio Cándido Ortiz, Andrés Catena
Web:
Learning Emotion Decision Research Group
e-mail: acandido@ugr.es
Room: 380 (Psychology Building)

Brief description of the project:
Risk perception of risk contexts and making risky decisions or not in these contexts usually carry physical, emotional and moral consequences of great personal impact. These situations are clearly exemplified in traffic environments, although we can also observe them in other social or economic contexts. It is therefore important to investigate how these factors also influence decision-making in these contexts and the brain circuits involved in order to develop psychological treatment that improves decision-making.

Representative publications:

Megías, A., Navas, J. F., Petrova, D., Cándido, A., Maldonado, A., Garcia-Retamero, R., & Catena, A. (2015). Neural mechanisms underlying urgent and evaluative behaviors: An fMRI study on the interaction of automatic and controlled processes. *Human Brain Mapping*, *36*(8), 2853-2864. https://doi.org/10.1002/hbm.22812

Baltruschat, S., Cándido, A., Megías, A., Maldonado, A., & Catena, A. (2020). Risk proneness modulates the impact of impulsivity on brain functional connectivity. *Human Brain Mapping*, *41*(4), 943-951. https://doi.org/10.1002/hbm.24851

Master's Thesis (TFM) Topic of Research

SBIRT-Spain study: *Screening, Brief Motivational Intervention and Referral to Treatment) applied to a sample of Spanish recidivist drivers* (PND-2020-I019, MSCBS.)

Principal Investigator: Candida Castro

Web: www.ugr.es/~candida

e-mail: candida@ugr.es

Room: 208 (Psychology Building)

Brief description of the project:

Alcohol or drug consumption by reoffenders may be the tip of the iceberg that helps to detect problems of consumption detrimental to health that affect other aspects of their lives (family, social or work). To achieve early prevention of the risky behaviours associated with alcohol or drug consumption, we are planning to set up the SBIRT-Spain study: ***S****creening,* ***B****rief Motivational* ***I****ntervention and* ***R****eferral to* ***T****reatment) applied to a sample of Spanish recidivist drivers.*

1. Screening involves a rapid assessment of alcohol and drug abuse in the sample of recidivist drivers. Screening large numbers of individuals presents an opportunity to engage with those in need of treatment.
2. Brief Motivational Intervention (Cordovilla-Guardia, et al. 2017) in less severe cases of substance consumption (Substance Use Disorders, SUD).

It has proved effective in reducing recidivism in patients hospitalised for trauma, who presented positive for alcohol and/or illicit drug use. Its utility in early prevention among reoffenders attending courses to regain their licenses at driving schools has not yet been analysed: a) even though they are not actively looking for help or treatment for their problems, b) before more serious damage is caused, to avoid recurrent reoffending and promote healthy habits.

3. And/or for those reoffenders with more severe consumption abuse (SUD), referrals to specialised detoxification treatment programmes.

Representative publications:

Castro, C., Doncel, P., Dinu, A.I. & Padilla, F. (2023). Strong predictors of offender drivers: drug and alcohol addiction and the inability to dissociate binge alcohol or drug consumption from driving. Revoking their driver's

licence may not be enough. *Transportation Research Part F. Traffic Psychology & Behaviour, 92,* 337-352 DOI: 10.1016/j.trf.2022.12.002 ISSN: 1369-8478 Q2 IF: 4.349

Cordovilla-Guardia S, Fernández-Mondéjar E, Vilar-López R, Navas JF, Portillo-Santamaría M, Rico-Martín S, et al. (2017) Effect of a brief intervention for alcohol and illicit drug use on trauma recidivism in a cohort of trauma patients. *PLoS One. 12*: e0182441. DOI: 10.1371/journal.pone.0182441

UNIVERSIDAD DE GRANADA

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Master's Thesis (TFM) Topic of Research

Sex hormones, contraceptives, cognitive processes

Principal Investigator: Antonio Bernal Benítez
Web:
e-mail: antoniobernal@ugr.es
Room: 362 (Psychology Building)

Brief description of the project:
In this research line, we study the influence of sex, menstrual cycle and hormonal contraceptives on different cognitive processes (memory, attention, ...). For this purpose, men, and women with a natural cycle during the menstrual, ovulatory or luteal phase and women that use hormonal contraceptives participate in both behavioural and electrophysiological (ERPs) experiments. Additionally, we examine the levels of gonadic hormones (testosterone, estradiol and progesterone) during the performance of the tasks, in order to relate possible behavioural and electrophysiological differences with the influence that these hormones exert on the brain structures responsible for the cognitive processes.

Representative publication:
Bernal, A., & Paolieri, D. (2022). The influence of estradiol and progesterone on neurocognition during three phases of the menstrual cycle: Modulating factors. *Behavioural brain research, 417,* 113593. https://doi.org/10.1016/j.bbr.2021.113593

Line of Research for End of Master's Project (TFM)

Shared Semantic Processes in Language and Math

Principal Investigator(s): Pedro Macizo & Miguel Ayala
Web: https://www.researchgate.net/profile/Pedro_Macizo
http://memory.ugr.es/member/pedro-macizo
e-mail: pmacizo@ugr.es
Room: 310 (Psychology Department)

Brief description of the project or research line in which the student would conduct the TFM:

Historically, language and mathematics have been regarded as discrete domains of investigation. Yet, cutting-edge findings in cognitive neuroscience and experimental psychology are pointing towards the possibility of these two cognitive spheres interlinking, at least partially. Several intuitive factors lend credibility to this proposition. To exemplify, both language and mathematics necessitate the employment of symbols like letters and numbers, which are foundational to the creation of words and arithmetic problems, respectively. Furthermore, the underpinnings of mathematical proficiency may be rooted in the abstraction of linguistic procedures. In this present investigation, we seek to examine whether the semantic principles that might be common when people process language and math.

Reference publication on the subject of the TFM:

Ayala-Cuesta, M. & Macizo, P. (under review). Shared Semantics in Language and Mathematics: Implications for Learning.

Castro, S. & Macizo, P. (2021). All roads lead to Rome: Semantic priming between language and arithmetic. *Journal of Numerical Cognition,* 7(1), 42-65. https://doi.org/10.5964/jnc.6167

UNIVERSIDAD DE GRANADA

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Master's Thesis (TFM) Topic of Research

Text comprehension processes in bilinguals

Principal Investigator: Ana Pérez
Web:
https://www.researchgate.net/profile/Ana_Perez_Munoz2
e-mail: anaipe@ugr.es
Room: 312 (Faculty of Psychology)

Brief description of the project:
Our Memory and Language research group (HUM-740) has several research lines studying the relationship between language processing and bilingualism. One of these research lines focus on the high-level cognitive processes occurring during online text comprehension (i.e., inferences, monitoring and updating), in monolinguals and bilinguals, and (for bilinguals) in the native (L1) and second language (L2). We assess both behavioural and electrophysiological (EEG) measures, in different populations across development (children, adolescents, young adults and/or the elderly).

Representative publication:

Pérez, A., & Bajo, T. (2022). Working memory and high-level text comprehension processes in J. W. Schwieter and Z. Wen (Ed.), *The Cambridge Handbook of Working Memory and Language* (Chapter 21). Cambridge University Press. https://doi.org/10.1017/9781108955638

Pérez, A., Cain, K., Castellanos, M. C., & Bajo, T. (2015). Inferential revision in narrative texts: an ERP study. *Memory & Cognition*, *43*, 1105-1135. https://doi.org/10.3758/s13421-015-0528-0

Pérez, A., Hansen, L., & Bajo, T. (2019). The nature of first and second language processing: The role of cognitive control and L2 proficiency during text-level comprehension. *Bilingualism: Language and Cognition*, *22*, 930-948. DOI: https://doi.org/10.1017/S1366728918000846

UNIVERSIDAD DE GRANADA

MASTER IN COGNITIVE AND BEHAVIORAL NEUROSCIENCE

Master's Thesis (TFM) Topic of Research

The cognitive bases of rule enforcement

Principal Investigator: Ivar Rodríguez Hannikainen & María Ruz

Web: https://www.researchgate.net/profile/Ivar-Hannikainen-2 / https://wpd.ugr.es/~humneuro/

e-mail: ivar@ugr.es

Room: 229 (Psychology Building)

Brief description of the project:

The project involves examining how people resolve dilemmas that arise in legal decision-making. In particular, the project seeks to examine the extent to which people enforce rules by attending to the rule's text, and/or its purpose. The project also examines the role of moral attitudes and mental state inferences about a perpetrator's intent in people's reasoning about how to interpret and apply social and legal rules. To this end, the project draws on a combination of vignette-based experiments, as well as neuroscience and behavioral economic methods.

Representative publications:

Flanagan, B., Almeida, G., Struchiner, N., & Hannikainen, I. R. (2023). Moral appraisals guide intuitive legal determinations. Law & Human Behavior, 47(2), 367-383.

Hannikainen, I. R, Tobia, K., Almeida, G., … & Struchiner, N. (2022). Coordination and expertise foster legal textualism. Proceedings of the National Academy of Sciences, 119(44).

Master's Thesis (TFM) Topic of Research

The effect of retrospective attention on working memory

Principal Investigator: Fabiano Botta
Web: https://neurocog.ugr.es/Sitio_web/fabianobotta.html
e-mail: fabianobotta@ugr.es
Room: 327 (CIMCYC)

Brief description of the project:

Attention can be oriented both to information coming through the senses, and to information internally maintained in working memory (WM) in the absence of corresponding perceptual input. Despite the theoretical importance of attention in both domains, attentional mechanisms are much better comprehended in perception than in working memory. Evidence for an internal focus of attention towards working memory representations has come from studies showing that performance can be improved if attention is retrospectively oriented to the test-relevant contents of WM before testing them, showing the so-called retro-cue benefit. However, it is still not clear what are the exact mechanisms involved in the retro-cue benefit and what are the effects produced by retrospective attention on representations internally maintained in working memory. The main aim of the present line of research is to contribute to clarify these mechanisms by using both behavioural and EEG measures.

Representative publications:

Souza A. S., & Oberauer, K. (2016). In search of the focus of attention in working memory: 13 years of the retro-cue effect. *Attention Perception & Psychophysics*, *78*, 1839–1860.

Lepsien J., Griffin, I. C., Devlin, J. T., & Nobre, A. C. (2005). Directing spatial attention in mental representations: Interactions between attentional orienting and working-memory load. *NeuroImage*, *26*, 733–743.

Master's Thesis (TFM) Topic of Research

The psychological processing of traumatic events.

Principal Investigator: Andrés Catena Martínez
Web:
e-mail: acatena@ugr.es
Room: 388 (Psychology Building)

Brief description of the project:
The investigation of the processing of traumatic events and rare events, that only happen one or two times in a life has been neglected due to the difficulties, ethical and methodological, of reproducing them in the lab. Here, we propose the use of cyclomotor and car simulator to study these events, using high density electroencephalography and psychological measurements (tasks demanding vigilance during simulated driving and executive functions).

Representative publication:
Patalak, J. P., Harper, M. G., Weaver, A. A., Dalzell, N. M., & Stitzel, J. D. (2020). Estimated crash injury risk and crash characteristics for motorsport drivers. *Accident Analysis & Prevention, 136*, 105397.

Master's Thesis (TFM) Topic of Research

The role of anxiety in interpersonal decision making

Principal Investigators: Alberto Acosta and María Ruz
Web: http://neurocog.ugr.es/Sitio_web/Alberto_Acosta.html
www.ugr.es/~mruz/
e-mails: acosta@ugr.es, mruz@ugr.es
Rooms: 313 / 315 (Psychology Building)

Brief description of the project:
In previous studies, using economic games such as the Trust Game and the Ultimatum Game, we have found that interpersonal decisions are mediated by affective and evaluative information related to the game partner. Participants in the Trust Game must decide whether or not they want to cooperate with an unknown partner who can reciprocate in the offers or refuse them. Participants in the Ultimatum Game receive economic offers from a playmate who divides an amount of money fairly (e.g. 5 € - 5 €) or unfairly (e.g. 9 € - 1 €).. If the participant accepts the offer, both players will receive the amount distributed; while if s/he rejects it, no one will win anything. In both tasks, decisions regarding cooperation and rejection of fair and unfair offers are biased by the opinion of the participants about the morality of the play partner and the emotions expressed during the game. We want to study whether these effects are increased in people with high levels of trait anxiety, especially when the affective information is negative, given the deficits they present in executive control and their biases towards threatening information.

Representative publications:
Gaertig, C., Moser, A., Alguacil, S., & Ruz, M. (2012). Social information and economic decision-making in the ultimatum game. *Frontiers in Neuroscience, 6*. doi: 10.3389/fnins.2012.00103.

Pacheco-Unguetti A. P., Acosta, A., Callejas, A., & Lupiáñez, J. (2010). Attention and anxiety: different attentional functioning under state and trait anxiety. *Psychological Science, 21*, 298-304. doi: 10.1177/0956797609359624.

Master's Thesis (TFM) Topic of Research

The role of temporal expectation in protecting working memory content from distraction

Principal Investigator: Carlos González and Mariagrazia Capizzi

Web: https://ugr.es/~humneuro/

e-mail: cgonzalez@ugr.es; mgcapizzi@ugr.es

Room: 303 (CIMCYC)

Brief description of the project:

Adaptive behavior requires the ability to store and protect relevant, from irrelevant, information in working memory. Recent studies have provided initial evidence that temporal expectation about when interference could occur during the retention period of a working memory task might mitigate the detrimental effects of distraction. These studies reveal that participants are less susceptible to the intrusive effects of distraction in a temporally predictable environment compared to an unpredictable one. However, in previous work, temporal predictability overlapped with expectations about working memory content, since the nature of the interfering item was also predictable. In the present project, we will put the protective role of temporal expectations in working memory to a more stringent test by manipulating both temporal and working memory content predictability. Through tailored experimental designs, our goal is to gain further insight into whether temporal expectation can protect working memory contents from distraction under both stable and more volatile environments.

Representative publications:

Capizzi, M., & Correa, Á. (2018). Measuring temporal preparation. In A. Vatakis, F. Balci, M. Di Luca, & Á. Correa (Eds.). *Timing and time perception: Procedures, measures, and applications*. Ed. Brill, Leiden Boston, pp. 216-232.

Gresch, D., Boettcher, S., van Ede, F., & Nobre, A. C. (2021). Shielding working-memory representations from temporally predictable external interference. Cognition, 217, 104915.

Nobre, A. C., & van Ede, F. (2018). Anticipated moments: temporal structure in attention. Nature Reviews. Neuroscience, 19(1), 34-48.

Line of Research for End of Master's Project (TFM)

Two Main Processes for Two Main Domains

Principal Investigator(s): Pedro Macizo & Filip Andras
Web: https://www.researchgate.net/profile/Pedro_Macizo
http://memory.ugr.es/member/pedro-macizo
e-mail: pmacizo@ugr.es
Room: 310 (Psychology Department)

Brief description of the project or research line in which the student would conduct the TFM:

We propose two shared processes in language and numerical cognition: Memory retrieval (related to the lexical route in language and arithmetic facts retrieval in mathematics) and non-retrieval procedures (related to the sublexical route in language and counting/transformation procedures in arithmetic). To evaluate empirically this theoretical framework, The participants of the study completed five language tasks (i.e., lexical decision task, three reading-aloud tasks, and a homophone task) and two arithmetic tasks (i.e., solving simple and larger additions). From our theoretical view, we anticipated that the individual differences related to the retrieval and non-retrieval processes in reading would predict the individual differences related to the retrieval and non-retrieval processes in arithmetic, respectively. Multiple linear regression and logistic regression models confirmed that the individual differences in the use of non-retrieval processes during reading predicted the use of non-retrieval processes in arithmetic. Moreover, the use of lexical relative to the sublexical route predicted the use of retrieval relative to the non-retrieval strategies in arithmetic when these strategies were self-reported. Overall, this paper offers a new theoretical perspective in which both language and mathematics are ruled by same retrieval processes and non-retrieval procedures. The empirical evidence reported here supports our proposal.

Reference publication on the subject of the TFM:

Andras, F., & Macizo, P. (under review). *Shared Cognitive Processes of Language and Numerical Cognition: A Tale of Two Routes*

UNIVERSIDAD
DE GRANADA

NEUROPSYCHOLOGY INTERNSHIP: NEUROPSYCHOLOGY CENTERS (In Spanish)

PRÁCTICAS NEUROPSICOLOGÍA 2024-2025

Este listado podrá ser objeto de modificaciones posteriores por cambios imprevistos en los centros colaboradores.

CENTROS COLABORADORES EN GRANADA

FIDYAN NEUROCENTER

Nº de plazas: 1
Tutora: Claudia Rodríguez Águila
Email de contacto:
Domicilio: Fidyan Neurocenter. C/ Mozart, Edif. Zafiro, bajo. CP 18004, Granada
Horario: lunes a viernes de 9h a 14h. Posibilidad de tardes en horario variable.

Fidyan Neurocenter es un centro privado de atención al daño cerebral adquirido (accidentes cerebrovasculares y traumatismos craneoencefálicos) y otros procesos neurológicos como son los procesos degenerativos y demencias. Durante su estancia en el centro, el alumno adquirirá conocimientos no sólo de evaluación, sino que asistirá a sesiones de tratamiento para formarse en las principales técnicas de intervención con el paciente y su entorno. La combinación de ambos centros proporcionará al alumno la posibilidad de conocer el trabajo del neuropsicólogo en el ámbito hospitalario y en la asistencia privada.

Fidyan Neurocenter es una clínica neurológica con más de 15 años de experiencia. Nuestro equipo transdisciplinar cuenta con todos los perfiles técnicos (neurología, logopedia, terapia ocupacional, fisioterapia, neuropsicología y pedagogía) en las mismas instalaciones. Estamos especializados en patología neurológica, tanto en adultos: UNIDAD DE DAÑO CEREBRAL ADQUIRIDO (ictus, traumatismos, tumores, etc.) y UNIDAD DE ESTIMULACION COGNITIVA (deterioro cognitivo leve y demencias), como en población infantil: UNIDAD DE DESARROLLO INFANTIL. Durante las prácticas en el centro la/el alumna/o participará en las sesiones de evaluación neuropsicológica, sesiones individuales de tratamiento, así como sesiones grupales de estimulación cognitiva. Se le implicará también en las investigaciones con población clínica en las que pudiera colaborar el centro.

HOSPITAL UNIVERSITARIO DE SAN RAFAEL. CENTRO INFANTIL DE ATENCIÓN TEMPRANA (CAIT)

Nº de plazas: 2
Tutores: Armando Montes Lozano, Raquel Carrillo, Cristina Hidalgo, Francisco José Garrido.

Email de contacto: armandoml2@hotmail.com, rcarralmo@yahoo.es, crishr1990@hotmail.com, vamatres@hotmail.com.
Domicilio: Hospital de San Juan de Dios. C/ San Juan de Dios, 15. Granada
Horario: Mañanas y tardes.

El Centro Infantil de Atención Temprana (CAIT) de San Rafael atiende a niños/as que sufren trastornos del neurodesarrollo (Trastornos del Espectro Autista, Trastornos Específicos del Lenguaje, Discapacidad Intelectual, Trastornos por Déficit de Atención con y sin Hiperactividad…) o presentan factores de riesgo social. Las principales actividades que se desarrollan en él se centran en la evaluación y tratamiento de esta población.

AGREDACE (Asociación Granadina de Familias para la Rehabilitación del Daño Cerebral Adquirido)

Nº de plazas: 2
Tutores: José María Torralba Muñoz y Joaquín Pavón Pérez
Email de contacto: jmtorralba82@hotmail.com, joaquinpavonperez@gmail.com
Domicilio: Calle Poeta Vicente Aleixandre, 4. C.P: 18015. Granada.
Horario: Mañanas y tardes.

La población que se atiende en AGREDACE es casi en su totalidad adulta, en un rango de edad que oscila entre los 25 y los 60 años, afectados por diversas causas de daño cerebral adquirido, normalmente accidentes cerebrovasculares y traumatismos craneoencefálicos. Entre las actividades que el centro realiza se incluyen:
Evaluación y diagnóstico neuropsicológico.
Rehabilitación cognitiva.
Talleres y terapias grupales para afectados.
Taller para familiares.

CENTRO DE PSICOLOGÍA Y LOGOPEDIA ROCÍO RUIZ

Nº de plazas: 1
Tutora: Rocío Ruiz
Email de contacto: rociorupe@gmail.com
Domicilio: Paseo de Colón 10, 1ºE. Albolote (Granada**).**
Horario: De lunes a viernes, de 15:00 a 21:00 h.

El Gabinete atiende fundamentalmente a niños/as que sufren trastornos del neurodesarrollo (Trastornos del Lenguaje, Trastornos por Déficit de Atención con/sin Hiperactividad, Trastornos del Espectro Autista…) o dificultades en el aprendizaje (Dislexias, Discalculias). Las actividades realizadas en el centro se dirigen hacia la evaluación y, fundamentalmente, el tratamiento de esta población, junto con el apoyo emocional y asesoramiento de las familias, tratando de conseguir una mejora en la calidad de vida de estas.

NEDEA CENTRO DE NEURODESARROLLO INFANTIL

Nª de plazas: 2
Tutora: Genma Rodríguez Melchor
Email de contacto: genmarm@gmail.com
Domicilio: Calle Torre de la Vela, 7, 18008, Granada**.**
Horario: De lunes a viernes, de 16 a 21h**.**

NEDEA es un centro de atención especializada a niños y jóvenes con alguna dificultad en su desarrollo o en su etapa de aprendizaje a través de diferentes servicios integrales que incluyen neuropsicología, psicología infantil, logopedia, terapia ocupacional, atención temprana, y neurofeedback. Las actividades en las que participan los alumnos son: entrevista de acogida, evaluación neuropsicológica y diagnóstico, elaboración de informes, desarrollo de programas de intervención, sesiones de intervención neuropsicológica, talleres grupales, sesiones de neurofeedback, elaboración de material de intervención.

CONSULTA DE PSICOLOGÍA, NEUROPSICOLOGÍA Y LOGOPEDIA FRANCESCA MARTÍN

Nº de plazas: 1
Tutora: Francesca Martín García.
Email de contacto: francescamartingarcia@gmail.com
Domicilio: C/ Corral del Veleta, Edif. Madrid. Portal 3. Bajo A. Bola de Oro. Granada.
Horario: De lunes a viernes, de 16:00 a 21:00 h.

Línea de Trabajo en el centro: Evaluación, diagnóstico e intervención psicológica, neuropsicológica y logopédica en adultos y niños. La mayor parte de nuestros pacientes son niños con trastornos del desarrollo, retraso del lenguaje y dificultades de aprendizaje. El protocolo habitual consiste en realizar una evaluación exhaustiva de cada caso, elaborar un informe con los resultados de la evaluación, criterio diagnóstico y recomendaciones a seguir y planificar un programa de intervención. Es habitual la visita a centros escolares, CAIT, etc. a fin de coordinar la intervención con el resto de profesionales implicados en cada caso.

RESIDENCIA DE MAYORES "ENTREÁLAMOS"

Nº de plazas: 1
Tutora: Zulema Restoy Guindos
Email de contacto: psicología@entrealamos.com
Domicilio: Camino de Caparacena s/n, Atarfe (Granada).
Horario: De lunes a viernes, de 9:00 a 14:00 h.

La residencia "Entreálamos" es un centro privado-concertado que acoge personas mayores de 60 años. Estos residentes, pueden tener un desarrollo normal en su vejez, o pueden sufrir procesos patológicos que dificultan la autonomía en la vida diaria (demencias, accidentes cerebro-vasculares, problemas psiquiátricos, etc.). La labor que realizan los alumnos de prácticas consiste en evaluación, elaboración de informes, talleres grupales de estimulación cognitiva y tratamiento neuropsicológico.

INTEA. Centro de Intervención y Desarrollo especializado en Trastornos del Espectro del Autismo

Nº de plazas: 1
Tutora: Anastasia Muñoz Lastra.
Email de contacto: tasia.munoz.lastra@hotmail.com
fernandezlerchundi@hotmail.com
Domicilio: Avda. Fernando de los Ríos, 11.
Horario: Contacto con tutora.

El/la estudiante realizará las siguientes actividades:
- Observación de la intervención que se lleve a cabo.
- Intervención en los distintos contextos en los que se desarrolla una persona con autismo.
- Puesta en práctica de lo aprendido con intervención directa en personas con TEA.
- Manejo de escalas de evaluación y diagnóstico.
- Aprendizaje de técnicas e instrumentos concretos que se aplican al autismo.

Actualización bibliográfica de la intervención e investigación en autismo.
Aprendizaje del abordaje en autismo dentro de un equipo interdisciplinar

AISSE SINERGIA

Nº de plazas: 1
Tutora: Paula Iglesias Rodríguez.
Email de contacto: paulaiglesias7@gmail.com
Domicilio: Calle Pintor Manuel Maldonado 14 (entrada por Placeta Gutiérrez de Cetina).
Horario: Mañanas y tardes, de lunes a viernes.

AISSE S. Coop. And. Centro Sinergia es una cooperativa sin ánimo de lucro que trabaja con personas con afectación neurológica. El Centro Sinergia cuenta con un equipo transdisciplinar especializado en neurociencia clínica y formado por los servicios de neuropsicología, logopedia, terapia ocupacional y fisioterapia, que atiende a población adulta e infantil. Se realizan las actividades de: entrevista inicial y anamnesis, valoración neuropsicológica, emisión de informes, planificación de programas de neurorrehabilitación, seguimientos, así como talleres de adolescentes con alteraciones en el neurodesarrollo.

FUNDACION PURISIMA CONCEPCION

Nº de plazas: 1
Tutora: Angie Burgos Pulido
Email de contacto: aburgos.granada@hospitalarias.es
Domicilio: C/ Pedro Machuca, 23.
Horario: Mañanas y tardes, de lunes a viernes.

Institución de las Hermanas Hospitalarias que atiende a personas de 3 a 65 años con diversidad funcional asociada a discapacidad intelectual y otros trastornos.
Cuenta con diferentes dispositivos (colegio, centro ocupacional, unidad de estancia diurna, servicios residenciales, centro especial de empleo, etc.) atendiendo a más de 400 usuarios.
Durante las prácticas se realizarán con la psicóloga en el Colegio de Educación Especial (Centro de Educación Especial Proveedor de Recursos y Servicios) donde se realizan tareas relacionadas con evaluación, intervención, asesoramiento interno y externo, trabajo con familias y profesionales, talleres de habilidades sociales, de educación afectivo-sexual, terapia de perros. En el centro se llevan a cabo diferentes proyectos relacionados con accesibilidad cognitiva, inclusión educativa, relación con otros centros, formación externa, etc.

HOSPITAL DE NEUROTRAUMATOLOGÍA Y REHABILITACIÓN DEL H.U. VIRGEN DE LAS NIEVES. ESCLEROSIS MÚLTIPLE

Nº de plazas: 1
Tutor: Oscar Lafuente Aceituno
Email de contacto: oscarlafu00@gmail.com
Domicilio: Ctra. de Jaén s/n 18013, Granada.
Horario: Mañana

Durante su periodo de prácticas, los estudiantes tendrán la oportunidad de desempeñar diversas funciones relacionadas con su formación profesional. Entre las actividades previstas, se incluye la evaluación neuropsicológica con el objetivo de identificar, describir y cuantificar el deterioro cognitivo, emocional y conductual derivado de posibles lesiones cerebrales causadas por la esclerosis múltiple. Esta evaluación se realizará utilizando tanto tests neuropsicológicos específicos de la patología como generales sobre deterioro cognitivo, además de entrevistas semiestructuradas.
Antes de comenzar la evaluación de pacientes adultos con esclerosis múltiple, será necesario identificar signos deficitarios que puedan interferir en la evaluación, así como evaluar la medicación que pueda influir y la presencia de fatiga, depresión, ansiedad y calidad de vida de los pacientes.

Los estudiantes también tendrán la oportunidad de corregir e interpretar las puntuaciones obtenidas en los tests cognitivos administrados y elaborar informes neuropsicológicos detallados. Además, realizarán búsquedas bibliográficas relevantes para el área de conocimiento y utilizarán programas estadísticos para el análisis de datos.

En resumen, estas prácticas permitirán a los estudiantes aplicar sus conocimientos teóricos en un entorno profesional, contribuyendo a su formación integral en neuropsicología.

EQUIPO DE INTERVENCIÓN FAMILIAR OLA

Nº de plazas: 1

Tutora: Valle Matres Guerrero

Email de contacto: equipofamiliaola@gmail.com

Domicilio: Avenida América nº 55 (Centro María Zambrano).

Horario: mañanas y tardes.

Desde el Equipo de Intervención Familiar Ola atendemos a población infantil y adulta neurodivergente y a mujeres y familias desde un enfoque perinatal (concepción, embarazo, posparto y primeros años de crianza). Entre las actividades que llevamos a cabo se encuentran:

- Intervención y acompañamiento desde el modelo centrado en la familia, en contexto natural, con familias de niños y niñas neurodivergentes (Trastornos del Espectro Autista, Trastorno por Déficit de Atención con/sin Hiperactividad, Altas Capacidades y prematuros).
- Evaluación y diagnóstico neuropsicológico.
- Terapias individuales y grupales (en consulta o contexto natural).
- Talleres grupales.

CENTROS COLABORADORES FUERA DE LA PROVINCIA DE GRANADA

ADACCA. Asociación de Familiares de Pacientes con Daño Cerebral Adquirido de Cádiz

Nº de plazas: 1
Tutor: Francisco Javier San-Sabas Guerrero
Email de contacto: adacca@gmail.com
jsansabas@hotmail.com
Domicilio: Calle Eslovaquia, local 1.14-Parque Empresarial de Poniente- 11011 Cádiz.
Horario: a convenir

ADACCA realiza servicios de atención integral a pacientes con daño cerebral y familiares. Desde evaluación y rehabilitación neuropsicológica, logopedia, talleres para promover la autonomía y terapia familiar. La población atendida incluye a niños y adultos con daño cerebral adquirido.

Annex: How to express complaints and to make suggestions

For any questions related to this Master program you can contact the Master's Coordinator, by electronic means, or in person in their office hours. All forms of contact and timetables are permanently available here.

Additionally, for any question related to equality, inclusivity, and wellbeing, the Master has appointed a Commissioner for such issues. All ways of contact with them can be found here.

Finally, for the whole University community, since January 1st, 2023, there is available a new general procedure, aimed to facilitate the presentation of complaints and suggestions regarding any aspect of the services offered by the UGR. This procedure unifies all previous channels via the official "sede electrónica", which allows its monitoring and further analysis. The development of this procedure is fully described in this link.