



MEi:CogSci Projects for Specialisation

Effective February 2019

Projects at the Comenius University in Bratislava

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|--|--|---------------|--------------|
| Deciphering trained neural networks Igor Farkas, prof. Dept. of Applied Informatics, Faculty of Math, Physics and Informatics, CUB web | Finding reliable significant patterns in internal (hidden) representations of trained neural networks, as well as suitable measures, can be expected to shed light on the how the knowledge is organized in the trained network. The project goal is to design suitable measures that can help shed light on deciphering how neural networks make decisions. Systematic work, programming skills. Knowledge of neural networks and math background are an advantage. | Systematic work, programming skills. Knowledge of neural networks and math background are an advantage. | 1 | S-I |
| Connectionist modeling in cognitive robotics Igor Farkas, prof. Dept. of Applied Informatics, Faculty of Math, Physics and Informatics, CUB web | The goal will be to implement, simulate and analyse a small neural network model of a chosen agent component. Details will be specified individually. | Systematic work, programming skills. Knowledge of artificial neural networks and reinforcement learning is an advantage. | 1-2 | S-I |

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|---|---|--|---------------|--------------|
| <p>Investigation of the role of spontaneous activity in heterosynaptic plasticity</p> <p>Lubica Benuskova, prof.</p> <p>Dept. of Applied Informatics, Faculty of Math, Physics and Informatics, CUB</p> <p>web</p> | <p>Long-term potentiation (LTP) and long-term depression (LTD) of synaptic efficacy is considered to be the synaptic mechanism of long-term memory. The ability of high-frequency stimulation (HFS) to induce LTP of all major excitatory synaptic pathways in hippocampus is well-characterized. At the same time, neighbouring pathways exhibit heterosynaptic LTD. The goal of the project is to investigate the hypothesis that spontaneous activity of neurons is necessary for heterosynaptic LTD. This can be done either by computational model or by writing a review of experimental research articles that deal with this problem.</p> | <p>In case of computational investigation, programming in C++ required</p> | 1 | S-I |
| <p>Language learning in human-robot interactive scenario</p> <p>Martin Takac, assoc. prof.</p> <p>Dept of Applied Informatics, Faculty of Math, Physics and Informatics, CUB</p> <p>web</p> | <p>The student will work on a subtask within an existing research project aiming at a scenario where a human and/or robot (camera+arm) perform actions (point, pick, move, ...) with objects on the table (different shapes, colors, sizes). Human teaches the robot language, so that the robot can recognize and comment what is happening and react to verbal commands with appropriate actions. Language acquisition and cognitive control algorithms will be co-designed with the supervisor, and implemented by the student in Python. The work includes analysing results and writing a report.</p> | <p>Background in Computer Science, Python, previous experience with artificial neural networks not necessary, but welcome.</p> | 1 | S-I |
| <p>Studying the effects of motor training on cognition using mixed reality</p> <p>Roman Rosipal, PhD</p> <p>Institute of Measurement Science, Slovak Academy of Sciences, Bratislava</p> <p>web</p> | <p>The objective is to study usefulness and applicability of the motor training using mixed reality focused on the rehabilitation of patients after stroke. The project will involve pilot testing of an experimental protocol with a patient.</p> | <p>Systematic work, programming in Matlab or Python is an advantage</p> | 1 | S-I |

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|---|--|--|---------------|--------------|
| <p>Multiple objects tracking: implementation and electrophysiological aspects</p> <p>Roman Rosipal, PhD</p> <p>Institute of Measurement Science, Slovak Academy of Sciences, Bratislava</p> <p>web</p> | <p>The goal is experimentally study multiple object tracking, using the PsychoPy environment. Testing will be done on a small set of subjects.</p> | <p>Systematic work, programming in Python is an advantage</p> | 1 | S-I |
| <p>Cognitive and brain mechanisms of cognitive control in semantic retrieval</p> <p>Martin Marko, PhD</p> <p>Dept of Applied Informatics, FMPI / Laboratory of Cognitive Neuroscience, INPP</p> <p>web</p> | <p>Project focuses on the mechanisms and correlates of cognitive control during semantic retrieval. This assignment involves experimental manipulation and cognitive assessment of semantic retrieval measures in healthy participants. Optionally, the project may include non-invasive transcranial electrical brain stimulation (tES) and/or electrophysiological measurements of brain activity (EEG).</p> | <p>Experimental experience is welcome but not necessary. The use of transcranial electrical stimulation is optional.</p> | 1-2 | S-I |
| <p>Brain simulation, sensory gating and cognitive inhibition</p> <p>Igor Riečanský, PhD</p> <p>Institute of Normal and Pathological Physiology, Slovak Academy of Sciences, Bratislava</p> <p>web</p> | <p>Cognitive inhibition is essential for goal-directed behavior. This project will investigate the possibilities of modulating brain inhibitory processes using non-invasive transcranial direct current brain stimulation. An experimental approach will be adopted using behavioral and electrophysiological methods (EEG, EMG).</p> | <p>Experience in experimental research and quantitative methodology is an advantage.</p> | 2 | S-I |

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|--|---|--|---------------|--------------|
| Human being and information technology Emil Visnovsky, prof. Faculty of Philosophy, Comenius University web | Project will focus on the analysis and functions of information technology and its varieties in human life from a philosophical point of view based on contemporary cognitive science and AI. | | 1-2 | S-I |
| Nature of human consciousness Silvia Galikova, prof. Institute of Philosophy, Slovak Academy of Sciences web | Main objective of the project is to reconsider novel experimental and theoretical models, theories on the status and function of conscious experience. | Background in the philosophy of mind is an advantage | 1 | S-I |
| Role of emotions in accepting epistemically suspect beliefs Vladimira Cavojova, PhD Institute of Experimental Psychology, Slovak Academy of Sciences web | The aim of the project is to identify the role of emotionality in accepting epistemically suspect beliefs ESB, particularly to what extent do fear and anxiety motivate the rise, acceptance and dissemination of these beliefs, what is the relation to individual variables such as anxiousness, what is the effect of situational variables or individual experience – e.g., traumatizing experience (Bonanno & Jost, 2006), or experienced insecurity, lack of control, and such (Chapman University, 2016). | Background in the JDM is an advantage | 1 | S-I |
| Computer games as debiasing tools Lenka Kostovicova, PhD Faculty of Social and Economic Sciences, Comenius University in Bratislava web | We already know quite a lot on numerous cognitive biases - deviations from optimal judgments and choices. Yet, effective debiasing interventions are still missing. Recent evidence has shown that we can improve decisions with a single training intervention based either on instructional videos with personalized feedback or computer games. The project is aimed at designing and experimental testing similar intervention targeted at a specific group and biases that are particularly prevalent among its members. | Background in psychology is an advantage | 1 | S-I |

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|--|---|---|---------------|--------------|
| Pragmatic gesture comprehension: an eye-tracking study Jana Basnakova, MA Institute of Experimental Psychology, Slovak Academy of Sciences web | The focus of this project is on how listeners understand communicative pointing gestures, and on the comparison between mental processes involved in verbal vs nonverbal indirect communication. The student's role will be to adjust an existing Dutch stimulus set, collect and analyze reaction time and eye-tracking data. Alternatively, he/she can develop their own experimental paradigm. | Slovak language is preferred but not required | 1-2 | S-I |
| Development of beliefs by artificially modulated states of mind Tomas Gal, PhD IT Department, VM Mlyny, CUB web | Research into altered states of mind, done by various methods, like dance, meditation or stress. | Background in psychology is an advantage | 1 | S-I |
| Development of beliefs by artificially evoked altered states of mind Tomas Gal, PhD IT Department, VM Mlyny, CUB web | Aim of the research is to better understand the manifestation of various cognitive biases, but also to analyse those internal functions and mutual interactions. | Background in psychology or economics is an advantage | 1 | S-I |

Projects at the Eötvös Loránd University

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|--|---|---------------|--------------------|
| Evolution and Embodiment George Kampis ELTE, Department of Ethology web | Embodiment is a view of cognition. The aim is to study its relation to the evolution of different species. | No formal prerequisites but familiarity with biological evolution is expected. | 1-2 | S-I MA |
| Numerical cognition Attila Krajcsi ELTE, Department of Cognitive Psychology web | We study the effect of 40 Hz oscillations on rapid visual encoding. This is an EEG study that involves learning the method of EEG, conducting experiments and analyzing data. | Not prerequisites but numerical and programming skills are advantage. Have to be able to manage research (subject recruitment, scheduling, conducting experiment, preprocess data.) | 3 | IR II S-I MA |
| Spatial navigation in elderly subjects Zoltan Nadasdy ELTE, Department of Cognitive Psychology web | This study focuses on the decline of spatial memory in elderly population. Getting lost is one of the earliest sign of Alzheimer's disease. We seek to determine what aspects of spatial memory are affected first with age. | Programming in R, Python or Matlab is an advantage. Managing spreadsheets. | 1-2 | IR II S-I MA |
| Spatial navigation and theory of mind in children Zoltan Nadasdy ELTE, Department of Cognitive Psychology web | This study focuses on the relationship between the development of spatial concepts and the spatial component of the 'theory of mind' experiments. The study population is 3 year and older. | Programming in R, Python or Matlab is an advantage. Managing spreadsheets. | 1-2 | IR II S-I MA |

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|--|---|--|---------------|--------------------|
| Social learning and social cognition in infants Ildikó Király ELTE, Department of Cognitive Psychology web | Behavioral and eye-tracking studies in the field of Cognitive development | experimental experience with kids is preferred | 1 | IR II S-I MA |
| Cognitive aspects of dog-human interaction Prof. Adam Miklósi ELTE, Department of Ethology web | Studies include dog human communication, mutual reactions to emotional behaviour, cognitive aging in dogs, etc. | experimental and/or personal experience with dogs is preferred | 2 | IR II S-I MA |

Projects at the University of Ljubljana

| Project | Description | Qualifications | Places | Level |
|---|--|---|--------|-----------|
| <p>Cognitive Neuroscience of working memory and cognitive control</p> <p>Anka Slana Ozimič</p> <p>Mind and Brain Lab, Department of Psychology, University of Ljubljana</p> <p>web</p> | <p>Multimodal study of working memory and cognitive control employing EEG, fMRI, eye-tracking, behavioral studies.</p> <p>Possible topics: Visual and spatial working memory; Cognition-emotion interaction; Working memory and cognitive control in patient populations (schizophrenia, Parkinson's disease, major depression).</p> <p>See Mind and Brain Lab pages for other research opportunities: http://psy.ff.uni-lj.si/mblab/en/research</p> <p>Supervisor: prof. Grega Repovš</p> | <p>Solid foundations in experimental design and statistics are required. Prior experience with EEG, fMRI or eye-tracker is beneficial as well as python, Matlab and R programming skills.</p> <p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis</p> | 1-2 | S-I MA |
| <p>Brain connectivity studies</p> <p>Anka Slana Ozimič</p> <p>Mind and Brain Lab, Department of Psychology, University of Ljubljana</p> <p>web</p> | <p>The project involves data collection, development of tools for fMRI and EEG functional connectivity analyses and their application to existing and novel datasets.</p> <p>Supervisor: prof. Grega Repovš</p> | <p>Intermediate to advance programming, analytical and statistical skills are required. Familiarity with Matlab, python and possibly julia is desired.</p> <p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p> | 1-2 | S-I MA |
| <p>Gait and Cognition</p> <p>Anka Slana Ozimič</p> <p>Laboratory for Movement and Gait Disorders, Department of Neurology, University Medical Centre Ljubljana</p> <p>web</p> | <p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p> <p>Some phenomena researched so far: The influence of cognitive tasks on balance control in multiple sclerosis patients and in healthy subjects ...</p> <p>Possible supervisors: prof. Zvezdan Pirtošek, assoc. prof. Blaž Koritnik and others</p> | <p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p> | 1 | S-I MA |

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|---|---|---|---------------|--------------|
| Studying Cognition with TMS (TMS Lab) Anka Slana Ozimič Laboratory for Cognitive Neuroscience, Department of Neurology, University Medical Centre Ljubljana web | <p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p> <p>Some phenomena researched so far: Effects of Intention on Inhibition in Focal Dystonia: A combined TMS-EEG study; Comparison of the efficacy of different TMS protocols on primary motor cortex</p> <p>Possible supervisors: prof. Zvezdan Pirtošek, assoc. prof. Blaž Koritnik and others</p> | Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis. | 1-2 | S-I MA |
| Studying cognition with EEG (EEG Lab) Anka Slana Ozimič Laboratory for Cognitive Neuroscience, Department of Neurology, University Medical Centre Ljubljana web | <p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p> | Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis. | 1-2 | S-I MA |
| Neurological and neuropsychiatric disorders Anka Slana Ozimič Laboratory for Cognitive Neuroscience, Department of Neurology, University Medical Centre Ljubljana web | <p>Possible topics: Dementia, Parkinson's disease, Tourette's Syndrome, Depression, Schizophrenia</p> <p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p> <p>Possible supervisors: prof. Zvezdan Pirtošek, assoc. prof. Blaž Koritnik, doc. dr. Jure Bon and others</p> | Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis. | 1-2 | S-I MA |

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|--|--|--|---------------|--------------|
| Philosophy of Mind and Philosophy of cognitive science Olga Markič Faculty of Arts, Department of Philosophy web | Students may choose one of the topics: time and consciousness, free will, emotions and cognition, reasoning, intercultural aspects of cognition, neuroethics. | | 2 | S-I |
| Empirical phenomenology Urban Kordeš Faculty of Education web | Possible topic: The gesture of reflection in empirical phenomenology. Please contact the supervisor for availability of the project from March 2019 on. | Contact the supervisor and state your interests. | 1-2 | S-I |
| A systematic review of first-person research on decision making Toma Strle Faculty of Education web | The goal of the project would be to review first-person studies on decision-making, classify them — according to, for instance, the method(s) used, the type of decision situation(s) studied, etc. —, and to synthesise findings of the included studies. Optionally (dependent on the scope of the project), the student would compare/discuss findings of the systematic review with/in light of third-person research on decision-making, or decided-upon aspects of it. | Contact the supervisor and state your interests. | 1 | S-I MA |
| Decision-making Toma Strle Faculty of Education web web | Students may choose one of the following topics: decision-making as an embodied (enacted) activity, the comparison between laboratory studies of decision-making and decision-making in everyday life, and the role of self-referential processes (e.g., metacognition) in decision-making. If motivated, other topics pertaining to decision-making and related phenomena may be agreed upon. | Contact the supervisor and state your interests. | 1 | S-I MA |

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| <p>Neurolaw Toma Strle Faculty of Education</p> <p>jointly with Olga Markič Faculty of Arts web</p> | <p>The goal of the project would be to discuss implications of neuroscience for the law. More specifically, the student would focus on one of the following sub-topics: consequences of neuroscience's findings and its view of human nature (e.g., of agency, volition, or moral responsibility) for legal systems; admissibility of neuroscientific evidence and findings in courts of law.</p> | <p>Contact the supervisor and state your interests.</p> | 1 | S-I MA |
| <p>Contemplative traditions and Cognitive Science Sebastjan Vörös Faculty of Arts, Department of Philosophy</p> | <p>The aim of the project is to explore the (im)possibilities of mutual collaboration between contemplative traditions (e.g. Buddhism) and cognitive science. Specific topics may include (but are not necessarily limited to): neuroscientific studies of meditation; meditative/contemplative practice and the study of consciousness; meditative/contemplative practice and the study of consciousness in therapeutic setting; critical analysis of contemporary and traditional conceptions and practices of mindfulness (differences, similarities, broader implications); theoretical and philosophical underpinning of science-Buddhism dialogue as pertaining to cognitive science; critique of some recent trends in so-called "mindfulness movement", etc.</p> | <p>The supervisor should be contacted via email or in person with a preliminary sketch of the research proposal in mind (main topic, goals, methodology, etc.)</p> | 1-2 | S-I |
| <p>Phenomenology and Cognitive Science Sebastjan Vörös Faculty of Arts, Department of Philosophy</p> | <p>The aim of the project is to explore the (im)possibilities of mutual collaboration between phenomenological tradition in philosophy (Husserl, Stein, Scheler, Heidegger, Merleau-Ponty, etc.) and cognitive science. Specific topics may include (but are not necessarily limited to): the (im)possibility of naturalizing consciousness and phenomenology; phenomenological and enactive accounts of embodiment; criticism and defense of phenomenological accounts of empathy and intersubjectivity; phenomenological critique of classical neuroscience, etc.</p> | <p>The supervisor should be contacted via email or in person with a preliminary sketch of the research proposal in mind (main topic, goals, methodology, etc.)</p> | 1-2 | S-I |

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| <p>Computer simulations in epistemology</p> <p>Borut Trpin</p> <p>Faculty of Arts, Department of Philosophy</p> | <p>The students will address one of the existing philosophical problems related to belief updating, uncertainty and probabilistic reasoning. The project will involve a development of a computer simulation and statistical analysis of the obtained data.</p> <p>Please contact the supervisor for availability of the project!</p> | <p>Basic familiarity with R, python or NetLogo is welcome.</p> | 1-2 | S-I |
| <p>Language processing in healthy and brain-damaged populations</p> <p>Christina Manouilidou</p> <p>Faculty of Arts, Department of Comparative and General Linguistics</p> <p>web</p> | <p>The general topic of the project falls in the areas of Psycholinguistics and Neurolinguistics. The research questions we will tackle are the following: what are the mechanisms of language processing? How do we recognize words? How do we process sentences? In what way is language processing compromised when the brain is affected? A special focus will be given on language degradation as a result of neurodegenerative diseases, such as various types of dementia, and on how language could be used as a diagnostic tool for dementia.</p> | <p>Introductory knowledge of Linguistics, familiarity with linguistic terms, experience with experimental design and statistical analysis are a must. Familiarity with behavioral and/or electrophysiological and neuroimaging methodologies is desired. Contact the supervisor for more info.</p> | 1-2 | S-I |
| <p>Human-robot communication: How can a robot explain what it is doing?</p> <p>Prof. Ivan Bratko</p> <p>Artificial Intelligence Lab, Faculty of Computer and Information Science, University of Ljubljana</p> <p>web</p> | <p>Often, to carry out a given task the robot has to find and execute a complicated plan of actions, which may be quite hard to understand by a human observer. This may make the user uncomfortable and uncertain: What is the robot trying to do? The robot's actions may not make any sense to the user. Is the robot broken, or has it gone crazy? Why is a self-driving car increasing the speed for no obvious reason? To improve the user's trust, a robot or another device should in such cases be able to explain its behaviour. This largely ignored question is often difficult. The task of the student in this project will be to produce a literature survey of approaches toward this end, or develop their own ideas for generation of textual or visual explanation.</p> | <p>Basics of AI.</p> | 2 (more in case of team-work) | S-I |

Projects at the University of Vienna

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|---|---|---------------|--------------------|
| <p>Innovation, organization(-al cognition), design, and Enabling Spaces</p> <p>Univ. Prof. Dr. Markus Peschl</p> <p>Cognitive Science research Platform & Dept. of Philosophy</p> <p>website</p> | <p>Our guiding question concerns the topic of “how does novelty come into the world?”. Projects are offered in the fields of innovation (theoretical as well as applied projects; on an individual/cognitive and/or on a collective/ organizational level), creativity, design, organizational design, as well as studying and developing how space enables and supports innovation- and knowledge work (e.g., in the sense of the extended/enacted cognition approach), and how such spaces can be designed. Projects range from (but are not limited to) theoretical foundations (cognitive, epistemological, organizational, systems science, etc.), educational issues, such as acquiring innovation skills and mindsets, to the design of Enabling Spaces, such as office spaces or learning environments. Project work in small groups/ teams is welcome.</p> | <p>Interest and some experience in innovation, design, architecture, openness, and creativity</p> | 2-3 | IR II S-I MA |
| <p>Dance/Contact Improvisation as enactive cognition</p> <p>Mag. Elisabeth Zimmermann</p> <p>Dept. of Philosophy</p> | <p>Based on an embodied, enactive approach to cognition the aim is to investigate the role of the moving body, especially in different dance (improvisation) settings, for our sense-making processes. I can offer supervision of mainly theoretic projects in this area. Empirical research might be possible, depending on the concrete research question and background of the student.</p> | <p>Interest in interdisciplinary research, especially related to the phenomenon of dance/contact improvisation.</p> | 1 | IR II S-I |

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| Foundations of Sand? Revisiting Psychology's Classic Experiments Alexander Batthyany Dept. of Philosophy | <p>In recent years, it has been suggested that a number of psychology's "classical" findings, such as Zimbardo Prison Study and Milgram's Obedience experiment, may need to be reassessed – because the relative high effect sizes reported in these studies appear to be, at least in part, the product of a self-selection process of subjects: For example, in Milgram's Obedience experiment, a substantial number of the volunteer subjects refused to even take part in the experiment when they learned that they had to administer electric shocks to other subjects. In other words, the relatively high percentage of overly obedient („sadistic“) behaviour which Milgram reported may partially be based on the fact that only subjects who were willing to hurt other subjects were counted to begin with. Similar accounts (i.e. a tendency to report artifacts and take them as soundly based in an appropriate theoretical context and vice versa) may be put forth with regards to other, more recent classics (such as Baumeister's Ego Depletion experiments, and a number of findings reported in social psychology, such as Bargh's famous priming experiments). Recent initiatives, such as www.psychfiledrawer.org and the Journal of Articles in Support of the Null Hypothesis (www.jasnh.com) therefore attempt to instigate a careful reinvestigation of what perhaps has been taken for granted for far too long. Projects in this lab will look at some hitherto rarely questioned classical or famous experiments in psychology and test alternative accounts, the possibility of artifacts and conscious or unconscious contaminations of experimental research in (social) psychology.</p> | <p>Courage to question "established" findings and their underlying theories and models; ability to question, reason, and carefully design original experimental studies; moderate to intense liking of diving into controversy. Tutor will be glad to help getting results published.</p> | 4 | IR II S-I MA |
| Existential Cognition: Life and Death and our Minds Alexander Batthyany Dept. of Philosophy | <p>Testing the impact of (subtle) reminders (priming) of death and mortality on thought and behaviour as described by TMT. According to TMT, people try to keep awareness and anxiety of their inescapable death at bay by employing a number of defenses - such as merging with an in-group (such as religious denominations, political ideologies, etc.), or submitting to a leader (Messiah, dictator, liberator) or adhering to "cultural values" (i.e. placing higher values on brand products, etc.). Projects are welcome which are (a) broadening the scope of Terror Management Theory, (b) testing alternative models of TMT, (c) testing the boundary conditions of TMT.</p> | <p>Interest in interdisciplinary research (i.e. the philosophy and psychology of death and dying, existentialism, cognitive science). Also some interest in studying social injustice, prejudices, dogmatism, etc. which, according to the theory to be tested, is indirectly related to our unwillingness to confront the existential fact that there is a potential conflict between our will to survive and our knowledge that we won't.</p> | 3 | IR II S-I MA |

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|---|--|---|---------------|--------------------|
| <p>Impact of Control and Free Will Beliefs on Thought and Behaviour</p> <p>Alexander Batthyany</p> <p>Dept. of Philosophy</p> | <p>Recent evidence (see link) suggests that people's behaviour (such as altruistic helping, cheating, etc.) is, at least in part, a function of their belief in free will. Manipulating people's belief in their free will thus has significant consequences on their behaviour. To this date, however, only a very limited range of behavioural measures have been employed. The proposed projects may test for the scope and limits of the control-belief effect, or may test alternative explanations of the effects.</p> | <p>Interest in interdisciplinary research and existential issues such as free will, determinism, etc., interest in designing experiments in the border area between psychology, philosophy, and world-view studies.</p> | 2 | IR II S-I MA |
| <p>Making different tools from the same material in Goffin's cockatoos</p> <p>Alice Auersperg</p> <p>Messerli Research Institute, Comparative Cognition Unit/Goffin Lab</p> <p>website</p> | <p>Goffin's cockatoos have the capacity to make and use tools. In order to determine ability to plan the function of a tool during manufacture, we will test if they can use the same material to make up to three tools for completely different purposes.</p> | <p>BA, experiments in handling animals, preferably experience in behavioural experiments</p> | 1 | MA |
| <p>Composite tool manufacture in Goffin's cockatoos</p> <p>Alice Auersperg</p> <p>Messerli Research Institute, Comparative Cognition Unit/Goffin Lab</p> <p>website</p> | <p>Composite tool use is an important aspect of human technical evolution. Goffin's cockatoos have the capacity to make and use tools and they are stacking objects during object play. Here we will test if they can purposely create a functional tool by adding several separate components.</p> | <p>BA, experiments in handling animals, preferably experience in behavioural experiments</p> | 1 | MA |

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|---|---|--|---------------|--------------------|
| <p>Picture-object discrimination in kea</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>Picture-object recognition is a common field of research, but often it is unclear from the results if the animal generalized from one to the other type of stimulus, or equated them. This project would standardize the view of both the objects and pictures of the same to determine if kea can recognize the difference between a 2D picture and a 3D object. This can also be expanded on to investigate the factors that increase picture-object discrimination.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I |
| <p>Matching-to-sample with real objects in kea</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>Matching-to-sample is a widely used tool of animal cognition research. The aim of the project is to train the kea on this testing format, to allow for future application. Time permitting these could already be explored in the frame of this project. Examples: real object categorisation, facial recognition, number-quantity association</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I MA |
| <p>Generativity theory in kea: linear reward sequence</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>The Epstein/Köhler insight experiment has been tested with a variety of animals. The subject is trained on the individual steps required to solve a problem, and is then required to string these together into a sequence that allows the solution of a novel reward scenario. This project will test this phenomenon in kea.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | MA |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|---|--|---------------|--------------------|
| <p>Same/Different discrimination learning and the role of entropy</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>The understanding of relations, such as 'same' and 'different' can be advantageous for animals in many aspects of their life and may employ various cognitive mechanisms. This project aims to train kea on discriminating between sets of identical and different symbols. Once learned, it will be tested whether this was achieved by the formation of relational concepts, or was based on feature learning. Further, it will be investigated to what extent entropy perception might account for such categorizations.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I MA |
| <p>Cognitive cooperation in the loose-string-paradigm</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>The loose-string-paradigm is widely used as an example of cooperative behaviour (if completed with another partner). The cognitive understanding of the task is however often not the focus of the research. Here we build on several pilot studies which taught the kea the mechanisms of the experiment, and investigate the bird's abilities to deal with non-egalitarian sharing.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I MA |
| <p>Video-image recognition</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>A large collaboration is being set up to investigate the ability of several bird species to imitate. In this pilot study we want to investigate if kea can recognize real world individuals/objects/situations from a video recording. This study will attempt to determine if kea can retrieve information on the solution of a task from watching a demonstrator on a video recording. The study can be expanded if necessary to investigate the boundaries between moving video and alternating pictures in the visual process.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I MA |
| <p>Vocal repertoire of captive kea</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>A large collaboration is being set up to investigate the ability of several bird species to imitate. In this pilot study we want to investigate the vocal ethogram of captive kea populations to serve as a basis for the subsequent work on vocal imitation. The Haidlhof population will serve as the basis, but the investigation will be expanded to other European kea populations.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I MA |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|---|--|---------------|--------------------|
| <p>Time-delayed access affects solution time</p> <p>Dr. Raoul Schwing</p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p>website</p> | <p>Previous studies have shown that kea can decrease their time to solve a task after watching a conspecific solve the same task. The general theory would suggest that the kea learned from the actions of their peers, however there is the chance that the delayed access to the apparatus allowed the waiting kea to contemplate possible solutions. Here we investigate the effect of having visual access to a technical problem before gaining physical access to solve it, when compared to direct physical access.</p> | <p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> | 1 | IR II S-I MA |
| <p>Social neuroscience of aging</p> <p>Federica Riva</p> <p>Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology</p> | <p>The project investigates the neural correlates of social affective touch and interoception in lonely and older adults. Data collection is finished, the internship will mainly focus on analysis of fMRI data.</p> | <p>Interest in social neuroscience of aging; previous experience (e.g. internship, university courses) with cognitive neuroscience methods and data analysis. Programming experience is appreciated.</p> | 2 | IR II S-I MA |
| <p>Effects of synchronous movement on group bonding</p> <p>Jasminka Majdandžić</p> <p>Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology</p> | <p>The project focuses on the question how synchronous motor behaviour affects group bonding, as well as several other social and non-social cognitive and affective processes. Involvement in the project can either take the form of a master thesis project, or an internship.</p> | <p>Strong interest in social (neuro)science</p> | 1-2 | IR II S-I MA |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|--|---|---------------|--------------------|
| <p>The role of testosterone in decision-making involving risk-taking, and social competition Keywords: Testosterone, Competition, Decision-making, Risk Annabel Losecaat Vermeer Neuropsychopharmacology and Biopsychology Unit, Faculty of Psychology</p> | <p>You will be involved in projects aimed at answering questions such as: How do hormones influences our ability to learn from social rewards and punishments in social interactions? How do social hierarchies influence our decisions to interact with others (e.g. compete)? How does social information influence making risky decisions for ourselves, as well as for other people? In this project you have the ability to acquire or improve some of the following research skills: participate in running large group experiments, organize participant recruitment and testing, administer hormones to participants, collect blood and saliva samples (for hormone analyses and genotyping), body measurements, conduct literature searches and review relevant papers, extract and code data and learn how to analyse and present the findings, design stimuli for experimental conditions, design studies and tasks using computer programs (such as Psychopy, Psychtoolbox)</p> | <p>Required: good in speaking and understanding in English, fluent in writing and speaking in German, motivated, good skills in statistics, ability to do, or willingness to learn: stimuli creation, basic computer programming (Matlab, Psychopy)</p> | 1-2 | IR II S-I MA |
| <p>Age-dependent memory decline: a pathological or sociological trait? Michael L. Berger Center for Brain Research, Medical University of Vienna</p> | <p>Forgetfulness is a common behavioral symptom of aging humans. It may progress to dementia, but usually afflicted subjects learn to handle their inconvenience and continue an independent life. The neurobiological basis of age-related memory decline is a target of intense clinical and neuroscientific research. Neuropathological and cognitive indications point to a slowly developing trait extending over decades. Human societies heavily depend on the tradition of knowledge slowly accumulating over many generations. This process includes an important role of elderly people as the source of information to be conserved. During evolution of the genus homo, longvity appears to represent an important trait. This may have allowed for the appearance of one section in human societies spezializing in the tradition of old knowledge. The 'old ones' may have been selectively predisposed to old memories by the neurobiological weakening of new memories. By that, forgetfulness at advanced age might have developed as advantage for the society and should not be regarded as pathological trait.</p> | <p>interest in the topic; the project will mainly include theoretical work.</p> | 1 | (IR II) S-I |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|--|--|---------------|--------------------|
| <p>Frequency of idiomatic word groups in the internet: a comparative language study</p> <p>Michael L. Berger</p> <p>Center for Brain Research, Medical University of Vienna</p> | <p>We all readily compose words into meaningful expressions, mostly without any effort. Nevertheless, even in a healthy human brain this faculty takes years to reach complete maturation. During our linguistic development we not only accumulate a vocabulary of several thousand words; we also learn to use groups of words that often adopt a new meaning exceeding the composite meaning of the contributing words (idioms, phrases). Groups of words that more often than by chance come together can be identified in large text corpora by search engines. An especially large searchable text corpus is the word-wide-web. While other available text corpora resort to special areas of human activities (e.g. literature or science), the www represents a heterogenous collection of all sorts of texts, from high arts down to the most trivial gossip. In addition, the huge content of this material is subject to continuous modifications and additions. In a pioneer study, I recently evaluated the frequency of word groups (n >= 3) in the www in 3 living languages: English, French, and German (Berger, J. Quant. Linguist., in press). In the proposed project, it is foreseen to extend this study to more languages.</p> | <p>interest in the topic; all you need to participate in this project is access to the internet, some 'language feeling' (most conveniently in your mother tongue), experience with handling excel tables, and persistence (for meaningful conclusions, at least 1.000 phrases will have to be collected and evaluated).</p> | 1 | (IR II) S-I |
| <p>Lexical and morphological acquisition</p> <p>Prof. Wolfgang Dressler</p> <p>Department of Linguistics, University of Vienna</p> | <p>Acquisition of lexical or morphological elements from a point of view of cognitive science: typical or handicapped development</p> | <p>psycholinguistics</p> | 3 | IR II S-I MA |
| <p>Word-formation semantics / Cognitive linguistics and semantics</p> <p>Dr. Stela Manova</p> <p>ICLTT/Philosophy</p> | <p>The project seeks to explain how people conceptualize the world at the level of word, i.e. the goal is to establish the cognitive concepts involved in word-formation. The focus is on categories such as persons and objects and their roles in derivation.</p> | <p>Specialization in lexical semantics and cognitive linguistics / Basic knowledge in linguistics</p> | 1 | IR II S-I MA |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|--|--|---------------|-----------------------|
| Word-formation constructions / Cognitive linguistics and corpus linguistics Dr. Stela Manova ICLTT/Philosophy web | Usage-based research on the word-formation patterns in a language. The approach followed is a distributional one, i.e. the combinatorial properties of an element (a piece of word structure) in a corpus serve for that element's identification and definition. The goal is to better understand the nature of the pieces of structure that serve for construction of words. | Specialization in cognitive linguistics and corpus linguistics / Basic knowledge in linguistics | 1 | IR II S-I MA |
| Word-formation in the mental lexicon / Cognitive linguistics and psycholinguistics Dr. Stela Manova ICLTT/Philosophy web | This research is with a focus on the organization of the mental lexicon. By testing native-speaker intuitions, the idea is to establish what is listed in the lexicon and how words are constructed there. | Specialization in cognitive linguistics and psycholinguistics / Basic knowledge in linguistics | 1 | IR II S-I MA |
| Intonation in Irony Antonia Rothmayr Dept. of Linguistics | We will investigate a specific construction and its ironic readings. We will record speakers and analyze their intonation. This will be joint work with the instructor. Project details are available upon request. | Background in general linguistics, basics of formal semantics, interest in intonational phonology, knowledge of German (=language under investigation) | 1 | IR II |
| Cognition and language learning ability (language aptitude) Susanne Maria Reiterer Unit of Language Learning and Teaching Research | for students interested into second language acquisition in general, but especially the (neuro-)cognitive aspects of individual differences in language learning ability (language aptitude for phonetic, semantic, morphosyntactic and/or pragmatic subsystems) interfaces to other cognitive systems (musicality, personality, etc). | experience in or interest for testing human participants, knowledge about psychometrics, statistics (e.g. SPSS, Excel), qualitative/and or quantitative psycho-social research methods. Willingness to pursue secondary research on theoretical and practical aspects concerning the individual project. | 1-2 | IR II S-I MA(?) |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|---|--|---------------|-----------------------|
| Language Café and multilingual societies Susanne Maria Reiterer Unit of Language Learning and Teaching Research | A second research focus concerns non-formal language learning strategies which are emerging nowadays in multilingual societies or areas, as e.g. the phenomenon of the "language cafe". | experience in or interest for testing human participants, knowledge about psychometrics, statistics (e.g. SPSS, Excel), qualitative/and or quantitative psycho-social research methods. Willingness to pursue secondary research on theoretical and practical aspects concerning the individual project. | 1-2 | IR II S-I MA(?) |
| Modelling Brain Connectivity on different cognitive aspects like speech production, articulation ability, language functions etc. Susanne Maria Reiterer Unit of Language Learning and Teaching Research | Brain Connectivity Modelling: In the course of a master thesis in computational neuroscience, there would be the possibility of a stay abroad in New York (min 6-8 months, for more info see link: http://research.mssm.edu/simonyanlab/positions.html). | Bachelor in Computer Science, Mathematics or a related field. Strong interest into maths and computational modelling. | 1 | MA |
| Literary and Cultural Representations of Emotion Christa Knellwolf King Dept. for English and American Studies | The research project investigates new methodologies for the interpretation of literary and cultural representations of emotion. | Interest in the interdisciplinary crossovers between literary studies and scientific approaches | 1 | IR II |
| Models of Personality and Emotions Paolo Petta Institute for Artificial Intelligence, Medical University of Vienna web | Project work, optionally also as complement to the related courses | | 3-4 | S-I |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|---|---|---------------|--------------|
| Serious Games in Health Care Paolo Petta Intelligent Software Agents and New Media at OFAI (Austrian Research Institute for Artificial Intelligence) | We are looking for students interested to conduct research in a range of disciplines in the domain of serious games in health care. Candidates will gain a broad overview of the state of the art in serious games research before focusing on a specific research topic. You will familiarise with the many perspectives and steps required in implementing a serious games project, from a first idea to a full concept that is scientifically sound, features interesting and conducive game mechanics, and is viable for practical deployment of impact. | Articulated interest (expression of motivation) in some sub-area of the application domain. Working knowledge of the cores of cognitive science paradigms and their implications in specific application settings. Availability for continuous active participation in group work and capability of carrying out assigned tasks (specifics to be developed individually). | 3-4 | S-I MA |
| [See description] Soheil Human Institute of Information Systems and New Media, Vienna University of Economics (WU Wien) | If you are interested in research on <ul style="list-style-type: none"> • Accountability and controllability of computational cognitive models • Cognitive Personal Assistant Systems • Human needs • Human values • Societal consequences of cognitive modeling • Predictive processing • Framing of information system (nudging) • Cognitive user interfaces • Cognitive information economies • Social imaginaries • Human-computer interaction • Intersection of European General Data Protection Regulation (GDPR) and Computational Cognitive Modeling • Semantic Web Technologies, Knowledge Engineering and Ontology development • Application of computational cognitive modeling from socioeconomic perspective <p>please make an appointment for more details.</p> | Please make an appointment for more details | 1-2 | IR II S-I |

| Project | Description | Qualifications | Places | Level |
|--|---|--|--------|--------------|
| <p>Incentivising Open Data Exploration through Needs Management</p> <p>Soheil Human</p> <p>Institute of Information Business at the Vienna University of Economics and Business</p> | <p>Needs satisfaction plays a fundamental role in well-being of biological cognitive systems, including humans. Hence, Understanding citizens' needs is crucial for developing a successful social and economic policy. This notwithstanding, acquisition, representation, analysis, and visualisation of citizens' needs remain areas where support by dedicated computational tools is very limited. Also applications of needs data in the design of online services has not been thoroughly analyzed.</p> <p>The goal of this project is to use existing needs profiles for organizing the catalogs of Open datasets and Open Data Apps, available at the Open Government Portal of Vienna (https://open.wien.gv.at/site/open-data/) and at the independent Austrian Open Data Portal (https://opendataportal.at).</p> <p>[BFUP] Beno, M., Figl, K., Umbrich, J., Polleres, A. (2017) Open Data Hopes and Fears: determining the barriers of Open Data. CeDEM 2017 https://aic.ai.wu.ac.at/~polleres/publications/Beno-et-al-2017CeDEM.pdf</p> <p>[HFKS] Human, S., Fahrenbach, F., Kragulj, F., Savenkov, V. (2017). Ontology for Representing Human Needs. Proc. of 12th Intl. Conference on Knowledge Engineering and Semantic Web, Szczecin, Poland. (to appear: see preprint at https://github.com/openeed/ond-family)</p> <p>[OpeN] The OpeNeed Ontology: https://github.com/openeed</p> <p>[KaK] Kaiser, A., & Kragulj, F. (2016). Bewextra: Creating and Inferring Explicit Knowledge of Needs in Organizations. Journal of Futures Studies, 20(4): pp. 79-98.</p> <p>[Dea1] Dean, H. (2014). Understanding human need. Bristol: Policy Press.</p> | <p>Internship position</p> <p>You will develop a web catalog of open datasets and apps based on different principles of artefact grouping. Given an existing citizen's need profiles (encoded as the ontology [OpeN]), a correspondence between the needs on the one hand, and datasets and apps on the other hand will be established, and the digital artefacts (datasets & apps) will be grouped according to needs they are related to. A user-experience experiment will be conducted to compare the traditional interface (based on predefined categories) and the need-based one to assess if organising the data according to the identified needs has positive impact on user experience, and motivate users to invest time into exploring Open Data.</p> | 1 | IR II S-I |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|--|---|---------------|--------------|
| Ontology Representation of Needs Profiles Soheil Human Institute of Information Business at the Vienna University of Economics and Business | <p>Needs satisfaction plays a fundamental role in human well being [TaD]. Hence understanding citizens' needs is crucial for developing a successful social and economic policy [Dea1, Dea2]. This notwithstanding, the concept of need has not yet found its place in systems and online tools for citizen participation. In fact, assessing needs itself remains a labor-intensive, mostly offline activity, where only a limited support by computational tools is available.</p> <p>While only a few methodologies for assessing and systematizing needs exist to date, including BEWEXTRA [KaK] developed in the WU Vienna, acquisition, representation and analysis of citizens' needs remain areas where support by dedicated computational tools is either limited or not existing.</p> <p>[Dea1] Dean, H. (2014). Understanding human need. Bristol: Policy Press.</p> <p>[Dea2] Dean, H. (2015). Social rights and human welfare. London: Routledge.</p> <p>[HFKS] Human, S., Fahrenbach, F., Kragulj, F., Savenkov, V. (2017). Ontology for Representing Human Needs. Proc. of 12th Intl. Conference on Knowledge Engineering and Semantic Web, Szczecin, Poland. (to appear: see preprint at https://github.com/openeed/ond-family)</p> <p>[OpeN] The OpeNeed Ontology: https://github.com/openeed</p> <p>[KaK] Kaiser, A., & Kragulj, F. (2016). Bewextra: Creating and Inferring Explicit Knowledge of Needs in Organizations. Journal of Futures Studies, 20(4): pp. 79-98.</p> <p>[TaD] Tay, L., & Dieer, E. (2011). Needs and subjective well-being around the world. Journal of personality and social psychology, 101(2): 354.</p> | Internship position In this project you will contribute to the creation of such tools by continuing the digitalization of a needs study, conducted with the citizens of the Vienna quarter Stuwerviertel following the BEWEXTRA methodology [HFKS]. You will help presenting the results of the study with an increased granularity using the OpeNeed ontology [OpeN], and then use SPARQL query language to provide examples of semantic queries against the resulting needs data. The project paper will report on your experiences and ideas for the improvement of OpeNeed, and analyze ways of improving computer support for needs assessment. | 1 | IR II S-I |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|--|---|---------------|--------------------|
| Rethinking Homeorhesis in Biomedical Contexts Isabella Sarto-Jackson KLI web | <p>Biomedical sciences and psychopharmacology draw primarily from the medical model of disease that provides a conceptual framework for the disease-centered model of drug action. This model presupposes that mental disorders are based on a derailment of brain homeostasis. Increasingly more scientists have begun to critically question the disease-centered model of drug action. The shortcomings of the model derive from assumptions of monocausality and effect linearity largely based on a mechanistic view. Yet, explanations using homeostasis neglect ontogenetic trajectories and system-level responses of the organism.</p> <p>This project focuses on the reinstatement of the concept of homeorhesis to supplement explanations of homeostasis. Including homeorhesis as an explanatory process within the medical model aims at facilitating a conceptual shift from a disease-centered to a drug-centered view. To this end, the project aims at gathering converging evidence of psychotropic drug effects to support the idea of homeorhesis in biomedical contexts.</p> | Interest in philosophy and neurobiology | 1 | IR II S-I MA |
| Reputation-motivated prosocial behaviors Hana Kutlikova Neuropsychopharmacology and Biopsychology Unit, Faculty of Psychology web | <p>We are studying the neurohormonal basis of human motivation in social environments. More specifically, we test how social rewards and steroid hormones effect prosocial behavior.</p> | Interest in computational modelling | 1-2 | IR II S-I MA |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|--|---|---------------|--------------------|
| <p>Another's Pain in my (Social) Brain – Effects of Placebo Empathy Analgesia on Social Behavior</p> <p>Helena Hartmann</p> <p>Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology</p> <p>web</p> | <p>The project aims at investigating the effects of an altered first-hand pain perception (by means of placebo analgesia) that has previously been shown to decrease empathic abilities (Rütgen et al., 2015 PNAS) on different types of moral social behavior (pro- and antisociality). It will mainly involve behavioral (and physiological) methods.</p> | <p>Required: Interest in social neuroscience of pain, empathy and prosocial behavior; Excellent command of English and German (due to work as experimenter), highly motivated to work on this topic, great organizational skills; time resources and flexibility (master students: min. 15 hours/week, interns: min. 10 hours/week); Advantageous: experience with or background of designing and conducting experiments; knowledge of programming (Matlab, Cogent toolbox)</p> | 1-2 | IR II S-I MA |
| <p>Collective Mind</p> <p>Dr. Lukas Zenk</p> <p>Donau-Universität Krems - Universität für Weiterbildung, Fakultät für Wirtschaft und Globalisierung, Department für Wissens- und Kommunikationsmanagement</p> <p>web</p> | <p>Individuals, organizations and even societies as a whole are facing more and more complex challenges. Tackling these challenges not only requires individual but collective effort. Based on that, the concept of Collective Intelligence, which was only recently developed, takes on greater significance. Collectively intelligent groups have the ability to solve significantly better a wide range of different tasks, requiring diverse competencies, than other groups. Accordingly, Collective Intelligence is closely connected with group performance. The research area of Collective Intelligence is still very young and raises many fundamental questions. The research project Collective Mind (Co-Mind) is aimed at answering three leading research questions. (1) How do selected factors (in particular Perspective Taking and Shared Mental Models) affect Collective Intelligence? (2) Which interventions enhance the Collective Intelligence of groups? (3) Which intervention-based best practices can be derived for stakeholder processes? In the project Co-Mind, underlying factors of influence and derived interventions will be empirically tested through experiments and first case studies will be evaluated. The project outcomes should contribute to a better understanding of Collective Intelligence and support stakeholder groups to solve complex challenges more intelligently.</p> | | 1-2 | IR II S-I |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|--|---|---------------|--------------|
| Organizational learning and Knowledge based Management ao. Univ. Prof. Dr. Alexander Kaiser Research Group Knowledge based Management, Vienna University of Economics and Business web | We do research in the field of knowledge based management and organizational learning. More precisely, we offer projects upon negotiation in the field of vision development, need-based innovation, organizational (un)learning and systemic coaching. | Motivation to work in an interdisciplinary team; some experience with qualitative research methods preferable; If field work is involved, German skills are necessary | 1 | IR II S-I |
| Organizational learning and Knowledge based Management ao. Univ. Prof. Dr. Alexander Kaiser Research Group Knowledge based Management, Vienna University of Economics and Business web | The proposed IR2-topic deals with the operationalization of three previously identified types of knowledge in the context of need-based organizational learning. It is intended for students seeking to explore the intersections of cognitive science and business/organizational related fields in a practical yet interdisciplinary way. Detailed project description here. | Interest in interdisciplinary research and organizational learning. | 1 | IR II S-I |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|---|---|---------------|-----------------------|
| <p>Reflection & Intercultural Competence Development Ingrid Pleschberger</p> <p>Head of International Office FH BFI Wien web</p> | <p>General Information: The competence to successfully interact with diverse groups and people who have very different backgrounds is defined as a key competence in many educational contexts. But how can we assess, if someone is intercultural competent and which experiences help us to gain such skills?</p> <p>We assume that reflective functioning is an antecedent that facilitates intercultural development and will look at the links between quantitative assessment methods such as <u>cultural intelligence (CQ)</u> or <u>multi-cultural personality (MPQ)</u> and <u>Reflective functioning with regards to intercultural experiences (RFIE)</u> an interview-based assessment method based on qualitative data.</p> <p>The main tasks for collaborating students can be:</p> <ul style="list-style-type: none"> • Data (interview) analysis of pilot study data • Developing a concept of a situational assessment of intercultural competence in a certain discipline • Possibility to conduct interviews with students regarding their international experiences <p>Resources (training, equipment, etc.) will be provided by the FH BFI Wien.</p> | <p>German & English skills at a level to conduct, transcribe and analyse qualitative interviews.</p> <p>Statistical Knowledge (familiar with SPSS)</p> <p>Interest in (intercultural) competence development and research.</p> <p>Experience with qualitative research is helpful but not a prerequisite.</p> | 3-4 | IR II S-I MA(?) |
| <p>Neurochemical foundation of social and non-social rewards Giorgia Silani</p> <p>Department of Applied Psychology: Health, Development, Enhancement and Intervention, University of Vienna</p> | <p>Psychopharmacological investigation of social and non-social rewards</p> | <p>Interest in social neuroscience and psychopharmacology. High commitment and time flexibility</p> | 1-2 | IIR II S-I MA |

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|--|--|--|---------------|--------------------|
| State-dependent modulation of social reward Giorgia Silani Department of Applied Psychology: Health, Development, Enhancement and Intervention, University of Vienna | Behavioral and pharmacological investigation of context-dependent (appetitive and aversive motivation) processing of social reward | Interest in social neuroscience and psychopharmacology. High commitment and time flexibility | 1-2 | IR II S-I MA |
| Neural basis of social and non-social rewards Giorgia Silani Department of Applied Psychology: Health, Development, Enhancement and Intervention, University of Vienna | Neurophysiological investigation of social and non-social rewards, by use of 7T MR scanner (high resolution) | Interest in social neuroscience and neuroimaging. High commitment and time flexibility | 1-2 | IR II S-I MA |
| Binocular rivalry in Autism spectrum disorders Giorgia Silani Department of Applied Psychology: Health, Development, Enhancement and Intervention, University of Vienna | Behavioral assessment of binocular rivalry in Autism spectrum disorders, to test the unbalanced excitation -inhibition hypothesis | Interest in social and clinical neuroscience. High commitment and time flexibility | 1-2 | IR II S-I MA |

Levels: IIRI: 10 ECTS (Semester 2) S-I: 10/15/20 ECTS (Semester 3) MA: 25 ECTS Master's Thesis (Semester 4)

| <i>Project</i> | <i>Description</i> | <i>Qualifications</i> | <i>Places</i> | <i>Level</i> |
|---|---|---|---------------|--------------------|
| NEW: Emotion Processing and Emotion Regulation Dr. Carmen Morawetz MR Center of Excellence, Medical University of Vienna web | In this project, we are interested in the neural networks underlying emotion processing and emotion regulation. We apply functional magnetic resonance imaging (fMRI) in combination with transcranial magnetic stimulation (TMS) to test network dynamics. The aim is to improve TMS application accuracy by using individualized brain targets. Thus, we will manipulate the emotion processing and regulation network by stimulating prefrontal cortex regions. We offer insights in the acquisition of fMRI data, analysis of fMRI data, and TMS stimulation. | Interest in cognitive and affective neuroscience Experience in experimental research Programming skills in R and Matlab are an advantage Knowledge of German | 1-2 | IR II S-I MA |