Electronic cigarettes (e-cigs) can help smokers to quit smoking. Unfortunately, perceptions among health professionals about the health effects, its efficacy as a smoking cessation aid, and the legislation on e-cigs have deteriorated and are not in accordance with the currently available evidence. To maximize the potential of e-cigs as a smoking cessation aid, it is important that health professionals acquire knowledge about these devices and their potential. We conducted a cross-sectional survey among Flemish general practitioners (GPs, n = 121). The main aims were 1) identifying the current perceptions on e-cigs among Flemish GPs, and 2) investigating if GPs report a need for more evidence-based information. Flemish GPs were on average 39 years old, female (57%), and had been practicing their profession for around 13 years. Only 5% of GPs was currently smoking. Flemish GPs were neither agreeing nor disagreeing on statements questioning their perceptions of the absolute risk, the relative risk of e-cigs compared to cigarettes, the dependency on e-cigs, e-cigs as a smoking cessation aid, the renormalization of smoking, and the media-attention of e-cigs. They did report a clear opinion that the legislation on e-cigs should be more strict. Only 19% of GPs advised e-cigs to their smoking patients. GPs (89%) prefer to receive information via an online course, a brochure or workshop. Flemish GPs do not advice e-cigs for smoking cessation, however, they do acknowledge a need for more evidence-based information. Opportunities lie ahead for study programmes to inform future health professions about e-cigs and their potential.
Find Napsy: A feature and conjunction visual search serious game for hemispatial neglect assessment

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Hemispatial neglect is a complex post-stroke disorder, characterized by the difficulty to respond to stimuli presented in contralesional space. It is explained as a disorder of spatial attention, but there is also evidence of non-spatial attention impairments (Vallar, 1998). In clinical practice, the evaluation of hemispatial neglect is frequently performed using paper-and-pencil tests, with cancellation, line-bisection, copying and drawing / copying tasks (Gauthier et al., 1989; Friedman et al., 1990; Marshall et al., 1993). Yet, these conventional tests have been criticized for the limited ecological validity (Azouvi, 2017) and for the lack of theoretical modeling of the patient’s actual performance (Appelros et al, 2004). We designed a computerized serious game task to evaluate hemispatial neglect. We employed feature and conjunction visual search to assess ipsi- and contralesional spatial target detection, measuring omission and reaction time. Furthermore, manipulation of distractors allowed measures of non-spatial attention. The purpose of this presentation is to describe the task and the theoretical model that we have based our design on. We will also propose the methodology of validation and the contribution this test will make to neuropsychology assessment of hemispatial neglect.
Using fast periodic visual stimulation to index the brain response to newly learned words

Céline Alameda (1), Anezka Smejkalova (1) and Fabienne Chetail (1)

(1) ULB

Recent studies showed that steady state visually evoked potentials (SSVEP) can be used to investigate the automatic brain response to words represented in the lexical memory. In the present study, we used SSVEPs to evaluate written word learning. On the first day, the participants were asked to read a book with pseudowords embedded in informative contexts and were asked to memorize them. On the second day, their electroencephalography (EEG) response to fast periodic visual stimulation was measured. In the first SSVEP stimulation, the participants were presented with a flow of pseudowords occurring at $F = 6.25$ Hz (baseline frequency). These items were interspersed with pseudowords learned on the first day, at $F' = F/5$ (1.25 Hz, oddball frequency). Spectral analysis showed a significant signal-to-noise ratio (SNR) in the left occipitotemporal area, at $F'$ and its harmonics. The SNR values were similar to those obtained in a control experiment, in which existing words were contrasted with unknown pseudowords. In the second SSVEP stimulation, the newly learned pseudowords were interspersed with existing words (with the same parameters as in stimulation 1). In this case, the spectral analysis showed also a significant SNR in the left occipitotemporal area, at $F'$ and its harmonics. The results suggest that visual discrimination of newly learned words among both words and pseudowords was very quickly achieved. This can be interpreted as an evidence for partial integration of the newly learned words into the orthographic lexicon.
What drives leaders to be moral? An investigation of the explicit and implicit motives of servant, ethical, authentic, and humble leaders

Justine Amory (1), Bart Wille (1) and Malte Runge (1)

(1) UGent

Despite a surge in interest in moral leadership over the past two decades, it is still unclear what actually drives leaders to behave morally. The lack of research on moral leadership antecedents can be explained by two factors: the absence of (1) a sound theoretical framework on moral leadership and of (2) a time-saving and reliable instrument to measure leaders’ inner drives or motives. Past research has indeed shown that leaders do not only differ based on their expressed personality (i.e., explicit motives) but also on what inherently motivates them (i.e., implicit motives): a high desire for power (control, impact, and influence on other people), affiliation (close and warm connections with others) or achievement (accomplishment, excellence and success). Using recent theoretical (Lemoine et al., 2019) and methodological (e.g., the motive self-categorization test; Runge & Lang, 2019) advances, this study aims at better understanding the factors underlying moral leadership behavior. Specifically, we use subordinate-supervisor dyads to examine the relationship between leaders’ implicit and explicit motives and their subordinate ratings on four moral leadership styles (i.e., ethical, servant, authentic, and humble leadership). In addition, we investigate whether implicit and explicit motives interact to predict moral leadership and whether they provide incremental validity over each other. Results will be available during the week of 25th of April, after the first data collection wave ends. Hypotheses were pre-registered in OSF and can be consulted via this link: https://osf.io/sakq4/?view_only=e5d17d979cc74b6889a85624dc74ec62
Can we increase the critical thinking skills of adolescents with a low literacy level and a vulnerable socioeconomic profile? In order to experimentally investigate this question, we conducted a 3-months intervention with thirty adolescents attending the 4th year of high school in technical and vocational orientation. This also allowed us to scrutinize, through a longitudinal design, the relation between literacy level and critical thinking. All groups underwent pre-and post-intervention assessments. Literacy was estimated through the Performance in Reading Comprehension Test (IREP), the Written Language and Disorders Evaluation Battery (BELEC), and a reading habits survey. Critical thinking was estimated through the Cornell Critical Thinking Test Level X. When we compare the level of critical thinking of the participants in the intervention, we can see a significant difference between the pre-and post-test. We observed a significant improvement in the adolescent’s critical thinking scores. In this poster, in addition to presenting our results, we will also discuss the fundamental principles of our intervention, which mixed discussion methods (e.g., Community of Philosophical Inquiry) with workshops inspired by the social psychology inoculation theory. Therefore, through this study, we will discuss our results conducting workshops for the development of intellectual self-defense against fake news, conspiracy theories and misinformation with underprivileged adolescents.
Neuroinflammation as potential underlying mechanism of leukoencephalopathy in patients with breast cancer after chemotherapy: A multimodal 18F-DPA714-PET and MRI study

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The neural substrates of chemotherapy-induced cognitive impairment remain largely unknown. Therefore, we investigated the effect of multiagent chemotherapy in women with breast cancer on white matter lesion burden with increased neuroinflammation as a potential precursor. Their association with cognitive outcomes was also investigated. Breast cancer patients who did (n=19) and did not (n=16) receive chemotherapy and a cohort of healthy women (n=16) were assessed one month after ending chemotherapy/surgery. Data collection included neuropsychological tests and neuroimaging, consisting of an anatomical T1-weighted MPRAGE, T2-weighted FLAIR and dynamic PET with the 18-kDA translocator protein (TSPO) radioligand 18F-DPA714 (to visualize neuroinflammation) for a subset of 15 participants/group. One-way ANOVA analyses showed no significant differences between the three groups on total white matter lesion burden. However, significantly higher TSPO volume of distribution (VT, partial-volume corrected) was observed in white matter lesions (M=1.72, SD=.92) compared to normal-appearing white matter (M=1.42, SD=.60) in the chemotherapy group (paired t-tests). A similar trend was observed in the control groups. Subsequent one-way ANOVA analyses showed the chemotherapy group to score worse on delayed verbal memory (M=11.20, SD=3.05) and fine motor skills (M=77.40, SD=13.20). A linear multivariate regression predicting these scores across groups revealed lesion volume, but not lesion TSPO VT, as a significant predictor of delayed verbal memory. No significant associations were observed for fine motor skills. With this multimodal approach, we are the first to demonstrate in vivo, via TSPO 18F-DPA714-PET, that cerebral neuroinflammation associates with white matter lesions in chemotherapy-treated breast cancer patients.
French adaptation of the Brief Irritability Test: Factor structure, psychometric properties, and relationship with depressive symptoms

Nellia Bellaert (1), Wivine Blekic (1), Kendra G. Kandana Arachchige (1), Laurent Lefebvre (1) and Mandy Rossignol (1)

(1) UMons

The Brief Irritability Test (BITe, Holtzman et al., 2015) is a brief, reliable, and valid self-report measure of irritability. Despite the growing interest to understand the underlying causes and consequences of irritability, this questionnaire has not been developed and validated for a French-speaking population yet. In the present study, 413 participants completed our French adaptation of the BitTe (i.e., TCI; Test Court d’Irritabilité) and measures of associated constructs (depression, anger, hostility, and aggression) and well-being (life satisfaction and social support). Descriptive, psychometric (i.e., Cronbach alpha and Spearman correlation coefficients), and factor analyses were conducted. An exploratory factor analysis in sample 1 (n = 209), yielded one single factor. The confirmatory factor analysis in sample 2 (n = 204) showed a reasonable fit of this single factor model explaining 55.5% of the variance and presenting a strong internal consistency (Cronbach's alpha = .80). Compared to the original English questionnaire, the TCI shares similar unidimensional factor organization and correlations with other constructs, although a gender bias was identified. Irritability was higher among respondents in the age range 17-25, compared to older adults. A hierarchical regression analysis showed that TCI scores significantly predict depressive symptoms when demographics were controlled for. In summary, the TCI presents good psychometric properties and could constitute a valuable tool to evaluate irritability in clinical and research contexts.
Virtual Reality for relaxation in a pediatric hospital setting: 
An interventional study with a mixed-methods design

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Accumulating evidence supports Virtual Reality (VR) as a feasible and effective method to alleviate anxiety and pain in pediatric patients during specific medical procedures. However, adoption of VR in clinical practice is limited. To address implementation barriers, this intervention study with a mixed-methods design focuses on the feasibility, acceptability, tolerability and preliminary effectiveness of Relaxation-VR, a VR application aimed to provide relaxation, as used for anxiety, stress and pain reduction for children in hospital. Primary outcomes include intervention completion, technical issues, the pediatric Simulator Sickness Questionnaire (tolerability), and visual analogue scales (VAS) addressing ease of use, likeability (feasibility), and future use (acceptability). Secondary outcomes include pre-to-post-changes in the Self-Assessment Manikin, VAS and Faces Pain Rating Scale-Revised to measure happiness and stress, anxiety, and pain, respectively. We present preliminary data of 28 pediatric patients of this ongoing study. A minority of participants (7/28) quit the intervention prematurely for reasons including discomfort and disliking the application. The majority of participants (21/28) reported no technical issues. Ease of use, likeability and acceptability of the intervention were favorably scored and participants reported no adverse events and minimal VR sickness. Compared to baseline, participants reported significantly less anxiety and tension (stress) and significantly more happiness while using Relaxation-VR. There was no significant change in pain scores. These preliminary findings indicate that Relaxation-VR is acceptable, feasible and tolerable for a variety of pediatric patients and can reduce anxiety and stress, and increase happiness in pediatric patients with various medical conditions.
Do children with dyslexia present a deficit in their copying skills?

Elise Blampain (1) and Marie Van Reybroeck (1)

(1) UCLouvain

While copying skills are daily used at school, there is little evidence about whether dyslexic children have a specific deficit in copying, in addition to their spelling deficit. Therefore, the present study aimed to examine in detail copying skills of children with and without dyslexia. Nineteen French-speaking Grade 3 and 4 dyslexic children were compared to 19 chronological age matched children (CA children) and 19 spelling age matched children (SA children). Participants were asked to perform 40-word dictation and copying tasks on the same target words. For each word, spelling, handwriting and gaze lifts measures were taken into account. Control measures on vocabulary, nonverbal intelligence, handwriting and reading were administered. GLMM analyses showed that all children did fewer spelling errors in the copying than in the dictation task, but had poorer handwriting quality in the copying task. In the copying task, dyslexic children made more spelling errors and more gaze lifts. They also used different copying strategies compared to CA children. Dyslexic children behaved in a similar way to SA children. These findings suggest that dyslexic children do have impaired copying skills. A better understanding of these difficulties could open up new perspectives for therapy.
On the temporal nature of parental burnout: Development of an Experience Sampling Methodology (ESM) tool to assess parental burnout and its related ever-changing family context

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(1) UCLouvain

Parental burnout is a growing subject of research, but thus far this research has not examined whether the features of parental burnout fluctuate over time. Moreover, parenting and parental burnout are inextricable from their family context. Therefore, a critical next step involves examining how parental burnout features interact with the ever-changing family environment. To do so, we developed an 11-item experience sampling methodology (ESM) tool to measure self-reported parental burnout features (specifically emotional exhaustion, emotional distance, and feeling fed up), as well as partner relationship, children’s behavior, behavior toward children, social support, and perceived resources. To ensure items were clearly phrased and covered the entirety of their construct via statements applicable to most parents daily, we sought feedback from parents (from the general population) and parental burnout experts. We also conducted two preliminary rounds of ESM data collection, one over a one-week period (n = 5) and a second over a two-week period (n = 9). Participating parents found the ESM survey easy to answer and not burdensome. Their results indicated sufficient within-person variability for all ESM items, supporting that these three parental burnout features fluctuate over time. We collected the ESM data using formr, an open-source platform, and we provide open access to all materials (including a formr template, allowing free use of the assessment tool) and data: https://osf.io/s2yv5/. Finally, we discuss how assessing parental burnout over time can help usher parental burnout research and treatment forward.
In order to best meet the needs of the patient, the Evidence-Based Practice (EBP) movement encourages health-care providers to incorporate high-quality scientific evidence into their practice (diagnosis refinement, intervention guide, patient progress monitoring). Randomized controlled trials (RCTs) provide much of this evidence. However, as suggested by meta-research studies, the lack of RCTs methodological quality in some health-related fields (bias and errors in the reports) can strongly limit the usefulness of the results. This represents a real ethical problem and reduces the likelihood of clinicians embracing EBP. The aim of this research is to analyze the methodological quality and the reporting completeness of recent RCTs that evaluate the efficacy of cognitive interventions aiming to attenuate memory deficits in children aged 0 to 18 years. At this end, we will firstly select a sample of RCTs published between 2015 and 2020 using the databases PsycINFO and Medline. We will analyze these articles in three phases. First, we will check whether the articles report all the information recommended by the CONSORT guideline. Second, we will assess possible methodological biases using the Version 2 of the Cochrane risk-of-bias tool for randomized trials (RoB2). Third, since the effect size and its clinical interpretation are essential for the understanding of a treatment efficacy in the clinician's daily practice, we will look at the extent to which, and how, that literature handles effects sizes, using a list of detailed criteria. The results could help researchers to adapt their work to the clinician needs.
Attention deficit hyperactivity disorder (ADHD) is the most common neurodevelopmental disorder in children. It notably comprises attentional and executive function disorders, leading to significant difficulties in school, psychosocial and daily life functioning. Problematically, the effectiveness of pharmacological treatments in reducing ADHD symptoms does not tend to last long and does not generalize to school performance. Furthermore, this type of medication can cause harmful side effects. Consequently, there is a strong demand for non-pharmacological treatments, in particular cognitive interventions. In recent years, many randomized controlled trials (RCTs) have evaluated the effectiveness of such interventions. To our knowledge, there is no systematic review on the results of studies focusing exclusively on cognitive treatments of attentional and executive skills in ADHD children. It is the goal of this study to conduct such a systematic review, in which we will collect, critically appraise and synthesize existing RCTs of cognitive interventions aiming at improving attention and executive function in children aged 6 to 18 years with ADHD. At this end, we will select relevant articles from four specialized databases (PsycINFO, Medline, Scopus and CENTRAL). Two researchers will perform this selection independently and in two phases. The first phase of the selection will relate to the title and the abstract of each article and the second phase to the main text. We will use the Version 2 of the Cochrane risk-of-bias tool for randomized trials (RoB2) to assess the presence of potential biases in every selected article. The review will conclude with a synthesis.
Are angry faces found more quickly within trauma-survivors with and without PTSD? An eye-tracking study.

W. Blekic (1), E. Wauthia (1), K. Kandana Arachchige (1), M. Vandenbol (1), L. Lefebvre (1) and M. Rossignol (1)

(1) UMons

Eye-tracking-based attentional research tend to highlight a sustained attention to emotional information in posttraumatic stress disorder (PTSD). However, most of this research employed controversial tasks (such as the dot-probe) and only negatively-valenced stimuli, which tend to orient the results. Furthermore, those experiments were performed on samples that did not include both trauma-exposed healthy participants and non-trauma-exposed participants. Here, using an established eye-tracking paradigm, we explore attention processes to neutral, positive and negative cues. PTSD patients (n=15, still collecting), trauma-exposed healthy controls (TEHC; n=37), and healthy controls (HC; n = 30) performed a Face in the Crowd paradigm in which 81 matrices were presented. Each matrix comprised nine different identities presenting either the same emotion (happy, neutral, angry), or in which one identity presented a different emotion (i.e. the intruder). The participants were required to identify as quickly as they can the intruder. One-third of the matrices (i.e., 27) were target-absent trials composed of only one type of emotional expression (i.e., nine trials each of matrices that were all neutral, all happy or all angry faces). Based on both reaction times to identify the intruder and attentional indexes derived from gaze patterns, we expect a differential attentional pattern in the three groups. While an adaptative rapid detection of threat is awaited in HC, we predicted an avoidance of threat in the TEHC group and a sustained attention toward every emotion information in the PTSD group.
Involvement of cardiac variability and interoception in emotional experience

Alice Bodart (1), Marie Othon (1), Laurent Lefebvre (1) and Mandy Rossignol (1)

(1) UMons

Current models postulate that subjective emotional experience results, among others, from the perception of body changes associated with emotional appraisal (Lane, 2000). This perception is based on both physiological reactivity and interoception, corresponding to the ability to detect internal bodily sensation. However, the links between physiological reactivity and interoceptive accuracy still unclear. This study aims to investigate this relationship by measuring heart rate variability (HRV) as an index for physiological reactivity and heartbeat detection for interoceptive accuracy. On the one hand, the HRV refers to the variation between heartbeats and is known to reflect emotional regulation abilities. On the other hand, cardiac interoceptive accuracy plays a major mediator role between the physiological emotional response and its subjective awareness. This study aims to disentangle the role of the HRV and interoception accuracy in the emotional experience. This study examines physiological reactivity and subjective emotional responses while watching emotional films, and the interoceptive accuracy assessed with a heartbeat-detection task. 20 men took part in the experiment. The experimental task consisted to appraise five emotional films of tenderness, anger, sadness and happiness. The HRV measurement started 5 minutes before the start of the films. The interoceptive accuracy was measured before the films. After each film, participants had to provide an emotional assessment by determining the type and intensity of emotions felt during the film. Data have been collected and analyses are currently in progress. Our results would allow determining the involvement of HRV and interoceptive awareness in emotional experience.
Mindfulness research among youngsters during COVID-19: 
Current progress and opportunities

L. Bogaert (1), M. Kock (1), P. Kuppens (1), K. Van der Gucht (1)* and F. Raes (1)*
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The COVID-19 pandemic impacted our personal and professional lives. And so, too, were we confronted with significant challenges in the context of our research project on the effects of mindfulness among youngsters in secondary schools. However, we decided to continue our project under slightly different circumstances. In this talk we will first illustrate the current progress of the study and the way challenges were dealt with. Second, as data collection started before the (first) COVID-19 lockdown was enforced in Belgium (n = 105) and continued during lockdown and thereafter (n = 87), the opportunity arose to investigate whether the impact of the pandemic is reflected in our baseline data. Compared to the pre-lockdown subsample, we expected the post-lockdown subsample to show higher levels of depressive symptoms, anxiety, stress, and anhedonia, and higher levels of the use of two dysfunctional emotion regulation strategies (i.e. repetitive negative thinking (RNT) and dampening-downplaying positive emotions). Finally, merging both subsamples provided us with sufficient power to examine the unique contribution of RNT and dampening in predicting levels of depressive symptomatology and anhedonia. We expected dampening to uniquely explain variance in both outcome variables, above and beyond RNT. This would imply interventions should simultaneously target both forms of dysfunctional emotion regulation.

OSF preregistration: https://osf.io/k5cuf/
An eye-tracking exploration of attentional bias in binge drinking

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Attentional bias towards alcohol-related stimuli is a core characteristic of alcohol use disorders (AUD), and is directly linked to clinical variables (e.g., alcohol consumption, relapse). Nevertheless, the extent of this bias in subclinical populations remains poorly documented. This is particularly true for binge drinking, an alcohol consumption pattern highly prevalent in youth, characterized by an alternation between excessive intakes and withdrawal periods.

We used eye tracking measures to: (a) measure the attentional bias in binge drinking, (b) determine its time course, by dissociating early/late processing stages, (c) clarify its specificity for alcohol-related stimuli, compared with other appetitive stimulations (i.e., high calorie food), and (d) explore its modulation by craving intensity. Forty-two binge drinkers and 43 matched controls performed a visual probe task, requiring to process visual targets preceded by pairs of pictures, with three conditions (alcohol vs. soft drink, alcohol vs. high calorie food, high calorie food vs. low calorie food). No group difference was observed for early processing (i.e., first area of interest visited). Dwell times highlighted a bias towards soft drinks and healthy food among controls, without any global bias towards alcohol in binge drinkers.

Centrally, a comparison of binge drinkers with low versus high current craving intensity indicated that binge drinking was associated with a bias towards alcohol and high calorie food only in the presence of high craving towards these stimuli. Overall, the attentional bias towards alcohol is only found in binge drinkers in the presence of high craving, and is generalized to other appetitive cues.
Predictive factors and early detection of Developmental Language Disorder: A systematic review

Camille Bonnet (1), Astrid Warny (1) and Jolijn Vanderauwera (1)

(1) UCLouvain

Early detection of oral language disorders is essential to ensure the implementation of early and effective intervention programs. However, knowledge is scarce on the early markers contributing to the emergence of Developmental Language Disorders (DLD), a developmental disorder characterized by long standing expressive and/or receptive language deficits along with a significant functional impairment in everyday life and occurring in the absence of a known biomedical etiology. In addition, suitable tools for early identification of children at risk for DLD remain fundamentally limited. The objective of this systematic review was two-fold: (1) provide an overview of peer-reviewed studies investigating early markers, risk, and predictive factors of oral language disorders, and (2) assess the potential of automated vocal analysis using the Language ENvironment Analysis (LENA) technology in a context of early detection of children at risk for DLD. From two independent literature searches using six electronic databases, a total of 1529 and 520 articles for objectives 1 and 2, respectively, were initially included based on our key search terms. Results are presented based on a qualitative thematic synthesis that summarizes the variety of contributing factors leading to the development of DLD and describes the relation between LENA-acquired measures and later language outcomes. Although the potential of the LENA technology for identifying children at risk for DLD remains to be investigated, the present review indicates that it provides a promising tool for improving early detection of DLD, especially considering that language-related variables appear to be the most well-established predictors of DLD.
From behavioral problems of children to relationship problems with children: The effects of LLInC – study design

Liedewij Borremans (1) and Jantine Spilt (1)

(1) KU Leuven

As the quality of the teacher-child relationship is related to different aspects of children’s development and teacher wellbeing, it is important to foster positive relationships. Attachment theory suggests that teachers internalize their experiences with a specific student in mental representations, which are automatically activated in daily interactions with the student and guide the teacher’s emotions and behavior. This can lead to a negative vicious circle were the reactions of the teacher and the problem behavior of the student strengthen each other. In these cases, intervention may be needed. Leerkracht Leerling Interactie Coaching (LLInC, or Teacher Student Interaction Coaching; Koomen & Spilt, 2010-2017) is an intervention targeting teachers’ mental representations, using relationship-focused reflection. The goal of LLInC is to help teachers attain mental representations of the relationship that are positive, flexible and differentiated, through a guided reflective process. Previous research supports the idea that relationship-focused reflection, and LLInC in particular, can foster positive relationship perceptions in teachers. Our study will be the first to examine the effects of LLInC in real-life conditions. We trained school consultants (N=17) as LLInC-coaches. These coaches will select a teacher in their workplace based on an identified need for relationship-focused reflection. Using a multiple baseline design, we will measure teachers’ emotions, relationship perceptions, self-efficacy beliefs and attributions before and following the intervention[∗]. Data will be analyzed at the single-subject level using visual analyses. Median-level differences between pre- and post-intervention phases will be calculated and trend lines within phases will be compared. Additionally, we will compute Tau-U values. [∗]Due to the COVID-19 situation, data collection was postponed. We will not be able to present any results. The poster will be focused on the study design and planned analyses.
Can critical thinking and source memory be improved in adolescents with low literacy level?

Habiba Bouali (1), Régine Kolinsky (1,2) and Olivier Klein (1)

(1) ULB; (2) FRS-FNRS

Nowadays, there is a large amount of information that is easily accessible due to the free circulation of information through the Internet, and it becomes more and more difficult to distinguish between real and fake information. To distinguish between them and thus to support critical thinking (henceforth, CT), we can rely on source memory (henceforth, SM) to identify and recognize the source of the information. We can then wonder whether SM skills impact CT skills. To answer this question, we examined if CT and SM can be improved with a CT training based on the inoculation technique and whether these capacities are influenced by the material used during the training. We made pre- and post-intervention assessments to measure SM and CT skills and conducted the CT training between these two test phases on 43 adolescents attending the third- or fourth-year courses for technical and vocational studies. Students were assigned to three training groups: (1) written group (n=20); (2) oral group (n=17); and (3) control group (n=6). Results from a repeated measures ANOVA showed (1) a significant improvement in performance from pre-test to post-test for both the SM task and the CT task; (2) no significant difference between the training groups. In addition, a correlation analysis showed that SM performance is associated with CT performance on the pre-test. However, no correlation was found between the pre-test and post-test gain for SM and CT. These preliminary data indicate that there is an improvement in SM and CT after our training. However, as there is no difference between the groups, we cannot be sure that this improvement is indeed due to our training rather than to repeated testing per se.
Temperament based personality types in community-dwelling older adults:
A latent profile analysis

Xenia Brancart (1), Gina Rossi (1), Eva Dierckx (1,3), Indra De Vos (1) and Rudi De Raedt (2)

(1) VUB; (2) Ugent; (3) Alexianen Zorggroep Tienen

Three personality types have been replicated across ages, cultures, clinical problems and clustering methods: a resilient, undercontrolled and overcontrolled type (RUO). These types are typically defined in terms of Big Five personality traits. Recently there is growing interest in and importance of biopsychosocial transdiagnostic factors underlying personality types, such as (reactive) temperament and regulatory processes. Temperamental reactivity can be understood in terms of Behavioral Inhibition (BIS) and Behavioral Activation Systems (BAS) and a fundamental basis of self-regulation is effortful control (EC). The occurrence of temperament based RUO types has been confirmed in both adolescents and younger adults diagnosed with eating and substance use disorders, but not yet in older adults with or without a mental disorder. It is unclear whether these types are consistent across the life span. Therefore, based on a person-centered approach, the current study investigates whether RUO types can be replicated based on the aforementioned reactive (BIS/BAS) and regulative (EC) factors. Two self-report questionnaires, namely ATQ-EC Scale (Evans & Rothbart, 2007; Dutch version, Hartman & Majdandžić, 2001) and BIS/BAS-scales (Franken, Muris, Rassin, 2005), were administered in 449 community-dwelling, Dutch-speaking older adults (M = 69.69; SD = 7.23). A probability-based latent profile analysis yielded two distinct personality profiles which we tentatively called a resilient (n = 167) and overcontrolled/inhibited type (n = 241). In comparison to the resilient type, the overcontrolled/inhibited type scored lower on EC and higher on BIS. We could not corroborate an undercontrolled type (profiles scored equally on BAS). Further validation of these types in terms of personality traits and clinical symptomatology is recommended.
The development of a Context Aware Personalisation System (CAPS) for promoting physical activity in adults

Maya Braun (1), Stéphanie Carlier (1), Femke De Backere (1,2), Annick De Paepe (1) and Geert Crombez (1)

(1) UGent; (2) imec

While most adults know the benefits of physical activity and intend to lead an active lifestyle, many fail in translation that into actual behavior. Mobile health applications may help in overcoming that gap, and provide opportunities to personalize and contextualize interventions. Here, we develop such an m-Health intervention by integrating theory with expert knowledge and user input in an interactive system. The application will be based on an ontology, which combines knowledge from various sources into a computer-readable system. Users will be required to set activity goals and create concrete plans to achieve them. They receive personalized guidance throughout this process based on their own profile and context. This guidance takes the form of personalized suggestions, which are generated using a decision support system and reinforcement learning algorithms. The application will be validated quantitatively concerning its effect on plan adherence and physical activity levels, and qualitatively concerning user experience, including feasibility and acceptability of the intervention. Expected results: We expect users to achieve higher levels of physical activity when receiving personalized guidance in comparison with standard guidance. We also expect the user experience to be more positive, including higher feasibility and acceptability. We are currently in the process of ontology development, and aim to finish this step by the beginning of 2022. Personalized and contextualized mHealth interventions have the potential to bridge the intention-behavior gap, and to tailor interventions to what works for whom under which circumstances.
Workplace ostracism and organizational dehumanization

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Scholars have recently started to examine the dark side of the employee-organization relationship through the concept of organizational dehumanization (i.e., employees’ perceptions of being objectified by their organization, denied personal subjectivity, and made to feel like a tool or instrument for the organization’s ends; Bell & Khoury, 2011; Caesens et al., 2017). Since organizational dehumanization has been found to lead to negative consequences for both employees and organizations, it is of primary importance to advance theory regarding its predictors (e.g., Stinglhamber et al., 2021). Furthermore, although past research in social psychology has highlighted that being ostracized leads people to feel dehumanized (Bastian & Halsam, 2010), this relationship has never been explored in work settings. Responding to those calls, this research focuses on the impact of workplace ostracism (i.e., the extent to which an individual perceives that he or she is ignored or excluded by others at work; Ferris et al., 2008) on organizational dehumanization perceptions and their outcomes. First, a preregistered experimental study manipulating workplace ostracism provides preliminary evidence of the mediating role of organizational dehumanization in the relationship between workplace ostracism and deleterious consequences for both employees and organizations. In line with our predictions, linear regressions and bootstrap analyses show that workplace ostracism increases organizational dehumanization perceptions, which in turn lead to decreased employees’ job satisfaction, loyalty toward the organization, and increased turnover intentions. A second cross-sectional field study replicates these findings using SEM. Implications for organizations and promising directions for future research are discussed.
A value accumulation account of impulsive food choices

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People sometimes engage in impulsive behavior that is inconsistent with explicit goals, such as consuming unhealthy food despite the goal to follow a healthy diet. We studied if this behavior can be explained by the value accumulation account. Accordingly choices are based on a dynamic integration process in which the values of multiple outcomes are considered sequentially. In food choices, two goals that are typically considered are a taste and a health goal. Applying the value accumulation account to food choices suggests that the value of food items accumulates with the sequential consideration of these goals. From this perspective, it is important to consider the order in which each goal is taken into account, which is likely to depend on the salience and values of the outcomes. If the value accumulation is stopped early (e.g., due to time pressure), the choice may only be based on the goal that was considered first, and could thus differ compared to a choice that is based on the consideration of both goals. To investigate this, we conducted a study in which participants were asked to choose between healthy and tasty food items in a computer-based task. We made taste or health goals salient via a priming procedure, and manipulated decision time by imposing time pressure vs. no time pressure. The results from this study are partially in line with the value accumulation account. We show that food choices may not be in line with self-reported goals due to differences in onset of goal consideration.
Evaluation is one of the core activities of clinical psychologists. However, according to Wright et al., (2019) psychologists tend to devote less and less therapeutic time to evaluation in profit of clinical judgment (44% in 1959 vs. 15% today). Yet, using only clinical judgment exposes the therapist to cognitive biases that can be harmful to patients. For example, clinicians tend to formulate a diagnostic hypothesis during the first minutes of therapy and then, only searching data confirming that diagnosis (Jenkins & Youngstrom, 2016). Those biases lead to favor some diagnoses, minimize the presence of comorbidity, and overestimate the therapeutic efficacy (Lilienfeld et al., 2014 ; Lilienfeld, 2007). Using an evidence-based assessment method (EBA; Youngstrom et al., 2017) prevents cognitive bias errors, but remains rarely implemented by clinicians. Using both surveys and qualitative interviews, we have identified several barriers reported by clinicians to using EBA, among which lack of time, difficulty to select relevant research documents, and difficulty to evaluate the scientific quality of the information. We aim to address these barriers by proposing a guide to select the appropriate evaluation tool and interpret its associated psychometric properties. Four major evaluation objectives have been identified (i.e., explore, screen, diagnose and evaluate treatment efficacy). Based on these objectives, we have determined which psychometric factors are essential, important, and secondary. This more parsimonious system lifts several barriers and might facilitate and encourage the application of EBA by clinicians.
Impact of deafness on numerical tasks implying verbal and visuospatial processes

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Hearing individuals in Western populations tend to represent numbers along a left-to-right oriented mental number line (MNL). This strong association between numbers and space is often reflected as the SNARC (Spatial Numerical Association of Response Codes) effect, which implies that small/large numbers elicit faster left/right-sided responses. Since the SNARC effect is observed even when hearing individuals cross their hands, numbers are assumed to be mapped onto an external frame of reference. While the direction of the MNL has often been attributed to the direction of reading and writing habits, some studies have suggested that finger counting habits can also determine the direction of the MNL. Interestingly, in deaf signers, the linguistic counting system is presented in a manual counting format. The particular way in which deaf individuals convey numbers on their fingers may thus lead to a number representation that differs from the one of hearing individuals. To investigate this question, deaf, hearing signer and hearing control adults were asked to perform a comparison task to 5 with the hands uncrossed or crossed over the body midline. Results demonstrated the presence of a typical SNARC effect in every group of participants and in both hand postures. The use of sign language does therefore not seem to change the nature of the external coordinate system in which numbers and space are mapped.
From lively playgrounds to busy classrooms, children communication usually happens in noisy settings. Perceiving speech in noisy is a complex task that requires an adequate combination of sensory perception and cognitive processing. In spite of their functionally mature auditory system, school-age children’s perception of speech in noise remains poorer than adults’. The main aim of this study was to better understand the mechanisms underlying this protracted auditory development. In particular, we focused on auditory selective attention and its relationship with speech perception in noise throughout development. Participants were included in one of three groups based on their age: 8-11 years (n = 31); 12-15 years (n = 38); 16-19 years (n = 26). Participants were presented a selective attention task as well as several speech perception tasks (in quiet and in noise). Results of the selective attention task revealed a significant developmental effect: the youngest children were consistently poorer than both groups of older children. Although all three age groups performed similarly at perceiving speech in quiet, the youngest group was significantly poorer than both groups of older children in noisy conditions. Interestingly, across all children, there was a significant relationship between stream segregation and speech perception in noise. This is in line with previous studies showing that auditory scene analysis relies on selective auditory attention, an ability that develops until late childhood.
The investigation of attachment figures’ safety properties and their potential in improving anxiety-related safety learning impairments

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The presence of attachment figures has been shown to provide individuals with a sense of safety and security. Findings indicate for instance their ability in reducing pain, stress reactivity, and neural threat responses. Despite clear indications for attachment-induced safety, only a limited number of studies have examined attachment figures’ potential in providing safety during fear conditioning. Additionally, in anxious individuals who typically show impaired safety learning during fear conditioning, the presence of an attachment figure may be able to improve these learning impairments – although, to our knowledge, this has never been investigated. To address these gaps, this study examined whether attachment figures are more easily associated with safety than control stimuli, and whether attachment figures can improve anxiety-related safety learning impairments. In a within-subject design, an online fear conditioning paradigm was used in which an attachment figure and two control stimuli (i.e., a stranger and a neutral object) served as safety cues. US expectancy ratings and distress ratings were measured as the indicators of safety learning. As the data is still being processed, the results will be presented at the annual BAPS meeting.
Extrapersonal space close to the body: A reduced attentional asymmetry next to the feet

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Previous studies showed that the small leftwards attentional bias (i.e., pseudoneglect), in spatial judgments of lines, is maximal when the stimuli is close of our body (i.e., peripersonal space) and decreases when the stimuli is far (i.e., extrapersonal space). Whether the extra or peripersonal space is defined by the distance between our body and the stimuli or our ability to grab it with our hands is unknown. We measured pseudoneglect in healthy participants with a landmark task in which participants decided which of the two segments of a transected line was the largest. Stimuli were displayed at three locations that varied as a function of distance between body and hands: Next to the body and hands (Close/Close); Far from the body and hands (Far/Far); Next to the body (close to the feet) and far from hands (Close/Far). The distance between the eyes and the stimuli was identical in the Far/Far and Close/Far locations. This allowed us to investigate whether a location close to the body but unreachable by the hands would elicit an attentional bias similar to the one observed in peripersonal or extrapersonal space. The results showed an overall leftward bias for each location. However, pseudoneglect was larger in Close/Close than in the other two locations. Our results suggest that the pseudoneglect does not varies as a function of the distance between the body and the stimuli. Instead, it suggests that the peripersonal and extrapersonal space should be defined as areas that are reachable or unreachable by our hands.
Predictive value of extinction, avoidance and generalization for subclinical anxiety and stress symptoms

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Learning processes like extinction, avoidance and generalization (EAG) play an important part in the development and maintenance of anxiety disorders. In this study, we investigated whether individual differences in these three processes are predictive for (subclinical) anxiety and stress symptoms in a stressful period in participants’ lives. It is hypothesized that impaired extinction, excessive avoidance and overgeneralization predict higher anxiety and stress at follow-up. A sample of 209 first-year psychology students participated in this study. On three consecutive days, they underwent an online fear conditioning task targeting each of the respective EAG-processes. Anxiety and stress symptoms were assessed at baseline before the conditioning tasks (T1), after receiving their first exam results at university (T2) and one month later (T3). Regression analyses will be used to test the predictive value of the EAG measures on anxiety and stress at baseline (T1), T2 and T3. These analyses will be repeated for two subsamples: students who have failed on one or more exams, and students who were disappointed by these (unsatisfactory) results. While the study is currently still ongoing, results will be presented at the BAPS meeting.
Gender bias in academia: Do students show more gender bias when they have fewer female professors?

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Both in- and outside of academia, women remain underrepresented in the labour markets’ top positions. Much research has focused on the causal influence of gender bias on social phenomena, such as the glass ceiling effect. The systematic impact of the social environment (e.g., few female professors) on gender bias in behaviour, however, has rarely been examined. In an initial study we tested the relation between students’ exposure to female professors and gender bias in their behaviour. Specifically, we examined whether the proportion of male to female professors in students’ university majors relates to gender bias in (a) professor evaluations, (b) perception of "professor" as a male or female profession, and (c) automatic and self-reported associations between the profession of professor and gender. The results of this initial study suggest that social context as determined by the ratio of female to male professors might not play a very strong role in gender bias. However, the absence of strong effects in this initial study does not necessarily imply that there are no effects of the percentage of female professors on gender bias. The study had several limitations and further research is necessary to test this relationship.
Do robots capture our attention as much as humans?

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Attention is an important mechanism for solving tasks, but our environment can distract us via irrelevant information. As robots increasingly become part of our lives, one important question is whether they could distract us as much as humans do, and if so to what extent. To address this question, we conducted two experiments in which subjects were engaged in a central letter detection task. In experiment 1 we used human, robot, and android static images as distractors, in experiment 2, same agents were presented in dynamic mode. The results revealed that robots and humanoid robots were equally distracting as humans, shown by the lack of difference in accuracy rates, and reaction times for the three agents. Moreover, participants were significantly more accurate and had higher reaction times when the task was hard compared to easy task. The distractor presence led to lower accuracy rates and higher reaction times, this effect was also present when the distractor was presented in dynamic mode compared to static mode. Urgen et. al (2020)’s study which used the same task’s static mode with prior knowledge of agents’ identities, revealed a significant interaction effect between task difficulty and human-likeness of agents. Distraction by the robot was more prevalent in the hard task while human agent distracted the most in the easy task. However, in the present study with no prior information, no interaction was found. One possible interpretation is the participants’ inability to recognize the different identities of distractors when they were not informed priorly.
Impact of Virtual Reality on stress level and sense of competence in ambulance workers

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(1) ULiège

Virtual reality (VR) exposure is one of the tools used in clinical psychology to treat anxiety disorders. It is also used to enhance the resilience of soldiers by confronting them with virtual combat environments. Increasing their resilience could strengthen them against the negative consequences of trauma exposure or the suffering experienced by people they rescued. Most studies focused on military and emergency medical personnel but none has so far investigated ambulance workers’ experience (AW) while they are daily confronted with traumatic situations. The current study aims to assess the impact of a single VR exposure session on AW’ competence and stress. Forty participants were randomly assigned to either a VR immersion (experimental group, N=20) or an audio immersion (control group, N=20) of a shooting attack situation. The main hypotheses were that VR would lead to a decrease of anxiety, as measured by Visual Analogue Scales, as well as an increase in the sense of competence compared to the control situation. The results showed a significant reduction in the fear VAS measure in both groups. Besides, results revealed an increase of the sense of competence after the VR immersion, and a reduction of the tension VAS measure in the control group, even if these differences didn’t reach statistical significance’s level (p=0.06). Although our hypotheses were only partially confirmed, since beneficial effects of either VR and the audio description on stress were observed, findings suggested that VR exposure could be a useful way to increase the resilience of the AW.
Investigation of mental fatigue in multiple sclerosis depending on task difficulty level

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Fatigue is the most invaliding symptom in 65% of patients with multiple sclerosis (MS) [1]. However, few data are available on the effect of mental fatigue on their cognitive efficiency. This study aimed to determine if mental fatigue alters performance according to task difficulty in MS patients. Eleven early MS patients (disease duration <5 y) and eleven matched healthy controls (HC) performed a working memory task (N-back) in a situation of high or low mental fatigue (experimental induction of the fatigue state). Repeated measures ANOVA (p<0.05) were conducted to determine the effects of fatigue (high vs. low), difficulty (1 to 3-back) and group (MS, HC) on hit rates (HR), decision criterion and sensitivity index (d’). Analysis of HR showed effects of group (F(1,20)=7.39, p<.05), difficulty (F(2,40)=33.86, p<0.001) and a difficulty*group interaction (F(2,40)=3.78, p<.05), with lower performance in MS, particularly in the most demanding condition. Decision criterion analysis only showed more conservative answers in MS patients (F(1,20)=7.10, p<.05). For d’, effects of group (F(1,20)=5.27, p<.05) and difficulty (F(2,40)=47.83, p<.001) were observed, with a smaller sensitivity index as difficulty increased and in the MS group. MS patients showed lower performance and were more conservative than HC, especially as the difficulty of the task increased. This suggests difficulty for allocation of attentional resources in MS. By contrast, we did not show fatigue-related effects on task performance in MS.
Hierarchical Task Representations in the Anterior Cingulate Cortex

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(1) UGent

The function of the anterior cingulate cortex (ACC) remains mysterious. Univariate functional magnetic resonance imaging (fMRI) analyses fail to discriminate between dominant theories, which predict similar univariate responses: the ACC is sensitive to errors, conflict, difficulty, rewards and punishments, and shows activation during many sequential decision making tasks. Here we use multivariate fMRI and computational modelling to investigate the hypothesis that ACC implements distributed representations of hierarchically-organized task sequences. First we develop a family of artificial recurrent neural network (RNN) models of the ACC, training those models on a hierarchical sequence task (i.e., making coffee or tea according to a pre-specified set of rules). Second, we use representational similarity analysis to compare the activity patterns of these RNN models to those exhibited in the ACC of participants performing the same task while undergoing MRI. Among the models tested are a replication of an earlier study validating the approach, and extensions of that model, including (1) adding goal units and (2) inducing an “abstraction gradient” in the hidden layer of the network. Results are consistent with the hypothesis that the ACC contributes to hierarchical reinforcement learning.
Cross-talk integration of subjective experiences

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Whenever we perform a difficult task, this is accompanied by multiple subjective experiences. If and how these experiences are associated with the objective difficulty of the task is still under discussion. In the current study, we investigated how task difficulty influences subjective reports of both confidence and effort. To do so, a random dot motion task (RDM) was combined with a colour attribution task. Task difficulty was manipulated by varying coherence in the RDM task and by varying colours in the colour attribution task. Participants reported their subjective confidence about their performance on the RDM task and their experience of effort on the colour attribution task. Confidence levels closely tracked RDM coherence revealing lower confidence with increasing difficulty. The subjective report of effort increased predictably with the colour manipulation in the colour attribution task. Interestingly, even though both tasks were presented as separate entities to the participants, subjective appraisals contaminated each other. The tasks required different dimension evaluation (i.e. movement and colour) and different responses at different times. Nevertheless, confidence levels varied with RDM difficulty but also depended on accuracy in the colour attribution task. Based on the current results, we hypothesize that the subjective experiences of confidence and effort are naturally combined into a single value. For this reason, even when circumstances are created as such to separate them as much as possible, they tend to influence each other.
Comorbidity and cognitive overlap between developmental dyslexia and congenital amusia in children

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Developmental dyslexia and congenital amusia are two specific neurodevelopmental disorders that affect reading and music perception, respectively. Similarities at perceptual, cognitive, and anatomical levels raise the possibility that a common factor is at play in their emergence, albeit in different domains. However, little consideration has been given to what extent they can co-occur. A first adult study suggested a 30% amusia rate in dyslexia and a 25% dyslexia rate in amusia (Couvignou et al., Cognitive Neuropsychology 2019). We present newly acquired data from 38 dyslexic and 38 typically developing children. These were assessed with literacy and phonological tests, as well as with three musical tests: the Montreal Battery of Evaluation of Musical Abilities, a pitch and time change detection task, and a singing task. Overall, about 34% of the dyslexic children were musically impaired, a proportion that is significantly higher than both the estimated 1.5-4% prevalence of congenital amusia in the general population and the rate of 5% observed within the control group. They were mostly affected in the pitch dimension, both in terms of perception and production. Correlations and prediction links were found between pitch processing skills and language measures after partialing out confounding factors. These findings are discussed with regard to cognitive and neural explanatory hypotheses of a comorbidity between dyslexia and amusia.
Word learning difficulties are often part of the deficits presented by children with Developmental Language Disorder (DLD). On one hand, this learning process is known to be inference-based and constrained among others by categorization, helping the extension of new words to unfamiliar entities. On the other hand, Bayesian models of word learning offer an approach combining these processes into an integrated framework, such as the inductive inference process recruits prior knowledge and principles of statistical learning (detection of regularities). Our study aimed at (1) defining if children with DLD can draw inductive inferences in a word-learning context using categorization; (2) defining if the task is easier when prior knowledge is available vs not available. 13 children with DLD (between 7;0 and 9;2) and 15 age-matched controls were exposed to a word-learning task in which they faced with exemplars of objects associated with pseudo-words. Objects belonged to three categories spreading across three hierarchical levels. For each item, children chose among a set of test objects from the same categories which one could be labelled the same. Our design included two parts, one with familiar categories and one with unfamiliar ones. Results replicated a previous study conducted on older school-aged children only on familiar categories, showing no differences in word extension between children with and without DLD in this condition. On the contrary, differences tended to emerge between both groups on unfamiliar categories, suggesting difficulty in category-based inference when no prior knowledge is available for children with DLD.
A prospective study on body image in children: 
The role of media influence

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Body image problems are reported during middle childhood and are associated with exposure to appearance-focused media. This longitudinal study investigated the extent to which three media influence components, Awareness, Pressure, and Internalization of media ideals, predict body image and eating problems in children and whether gender moderates this effect. A total sample of N = 688 participants (46% girls, aged 8-11 at T1) was studied. Self-report questionnaires were administered on the media influence components, body image and eating problems at T1 and T2 (1 year later). After controlling for age, adjusted body mass index and baseline levels of body image and eating problems, results show that media influence components significantly predicted Restraint and Concerns about Eating, Weight, and Shape one year later. Awareness, however, uniquely predicted increases in Eating Concerns in boys, while Pressure predicted increases in Concerns on Eating, Weight, and Shape in girls only. The current results indicate that media influences, some of which may be gender-specific risk factors, predict subsequent body image concerns of girls and boys during middle childhood. Thus, both boys and girls should be addressed in future research and prevention programs.
Palletizing like a pro: The potential of immersive virtual reality to learn box stacking

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Virtual reality (VR) is an upcoming technology in the educational field. It allows to immerse users in virtual environments which are difficult, dangerous or impractical to recreate and as such still allow them a ‘hands-on’ experience. Little is however currently known concerning the effectiveness of such technology as a means to enhance learning. In a pilot study, the potential of animated immersive VR was therefore assessed for the training of mixed palletizing abilities. 23 participants completed an immersive VR intervention in which they learned to quickly and accurately stack boxes on palettes. The procedure involved a tutorial, pretest, training phase and posttest. Main outcomes measures focused on the speed and accuracy in which tasks were completed. Additional questionnaires focused on both user and learning experience. Following the training, participants made significantly less errors, and became significantly faster. No influence of user experience on performance was found. Perceived learning was furthermore unrelated to the actual performance as measured by speed, nor accuracy, indicating the importance of objective measurements. In conclusion, this pilot study demonstrates that learning on mixed palletizing can take place in a virtual environment. Future research should replicate these results in a larger sample, while also exploring if and to what extent this learning can be transferred to real-life settings.
Experience of cancer and the need for information and participation in medical decision-making

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Sharing responsibility between patients and medical staff when important decisions about cancer treatment need to be made has received increased attention during the last decennia and has been related to positive health-related outcomes. However, structural barriers within the hospital environment such as time constraints and the limited inclusion of psychosocial patient information can make it difficult to guarantee a truly patient-centered care. This study identifies need for medical information and shared decision making in cancer patients. Moreover, we also hypothesize that depending on the patient’s stress profile, they would prefer a different amount of medical information and shared decision making. A survey consisting of ten validated questionnaires about the patient’s personality, level of health literacy, patient activation, stress, cognitive functioning, emotional impact, life satisfaction and psychosocial factors was filled out by 497 cancer patients from Belgium, the Netherlands and France who received treatment in the last couple of years. We are currently in the process of analyzing the data. The model and patient-profiling based on the results of this study will serve as a backdrop when developing personalized patient decision aids at a later stage of the research project.
Cognitive control is a process we use every day in life: shopping for groceries, medication compliance, having a conversation, looking for a friend in a big crowd. Our cognitive system constantly needs to filter out irrelevant information, maintain what is relevant, and inhibit inappropriate or automatic responses to achieve our goals. Miyake et al. (2000) found three separable components of cognitive control in young adults: inhibition, updating and task switching. Based on this seminal paper, many researchers limit the focus of their study to one of these components of cognitive control, often indexed by only one experimental task. However, the construct validity of the tasks used to measure these specific components is often limited: multiple aspects of cognitive control are usually needed to perform these tasks successfully. For this reason, we will assess a wide set of cognitive control subcomponents using a test battery of 11 behavioral tasks, in line with Miyake et al. Using factor analytic techniques, we will assess the underlying factor structure of these tasks. In this way, a valid, uniform test battery can be developed for young healthy adults, that will be accessible for other researchers through OSF. Additionally, the results of this study will provide a useful starting point for future developmental and clinical studies.
Poster 42

Free will (dis)beliefs: An exploratory analysis

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The concept of free will has been widely studied since Benjamin Libet’s works (1983), and the question of whether people have beliefs in free will and the consequences of these beliefs has become an important concern with fundamental implications. Today, beliefs in free will seem to be linked to prosocial behaviors (Vohs & Schooler, 2008; Baumeister, Masicampo, & DeWall, 2008) due to Baumeister’s (2008) notion that a belief in free will involves more stringent self-regulation. The purpose of this study is to assess the extent to which the works of Baumeister and his colleagues are generalizable to another concept that can contribute to prosocial behaviors: perspective taking. To this end, beliefs in free will are manipulated using the Vohs and Schooler’s (2008) method which consists of reading an excerpt of The Astonishing Hypothesis book (Francis Crick, 1994). An exploratory analysis will be conducted based on self-reported (questionnaires) and behavioral measures taken before and after the manipulation of free will beliefs. Participants will be individually tested on a computer. Special attention will be given to methodological limitations frequently encountered in similar studies, both in regards to the experimental design and the interpretation of the data. In this way, we will discuss theoretical considerations regarding free will beliefs, their consequences, and their underlying processes.
Can humans take their attention off a face? An electrophysiological signature of top-down cognitive control in a context of visual attention

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(1) ULB

On a daily basis, our sensory systems constantly process a huge amount of information. Attention directly plays on it and acts as a perceptual filter which goal is to enhance cortical activity associated to relevant information and suppress cortical activity associated to irrelevant distractions. To gain insight on this cognitive ability, we took advantage of the steady-state evoked potentials (SS-EP), a technique deriving from electrophysiology (EEG). Specifically, participants’ brain responses were measured while they viewed streams of images flickering at a rate of 6 Hz (6 images per second). Unknown to them, 2 visual categories also flickered at a predetermined frequency: faces every 5th item (f1 = 1.2 Hz) and birds every 4th item (f2 = 1.5 Hz). Depending on the block participants were involved in, they were either instructed to monitor a fixation cross superimposed to the images which flickered at a non-periodic rate (orthogonal task), or to focus on faces or birds. The results were threefold. First, they showed that instructions strongly modulate SS-EP peaks. Second, bird attendance made faces irrelevant which resulted in a suppression of the brain activity associated to faces. Third, faces tend to naturally engage participants’ attention more than birds. Overall, we demonstrated here that selective attention critically shapes brain responses by enhancing its neural responses to relevant stimuli and suppressing those to irrelevant stimuli.
Placement in foster care is a potentially traumatic event for children. Separating children from their home environment is a source of suffering. Although there is a growing interest in psychotrauma in children, the impact of a child's placement on resilience and post-traumatic stress disorder is not yet clear. This study analyses the influence of the child's intellectual abilities on resilience and psychological trauma in children placed in foster care. Participants were children placed in foster care (N=10) and children from the general population (N=30) aged 6 to 12 years old. Participants completed a thorough questionnaire on their history, took an intellectual quotient (IQ) test, and answered questionnaires about their resilience and post-traumatic stress symptoms. Despite the strong severity of the events experienced, our results suggest that foster children appear to be as likely as children from the general population to develop psychological trauma. In contrast, the impact of intellectual abilities is different for children placed in foster care and children from the general population. Verbal comprehension skills and cultural resilience emerged as important protective factors for children from the general population, but not for children in foster care. However, fluid reasoning and processing speed protect children in foster care from developing psychotrauma. Moreover, our study suggests that different factors, such as the number of placements and contact with the biological family, influence the severity of post-traumatic symptoms in children in foster care. According to our results, intellectual abilities are a relevant factor in the study of PTSD in children placed in foster care, but more research is needed to better understand the underlying mechanisms.
Cardiac activity is attributed to oneself or other independently of synchronicity of heartbeat biofeedback

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The synchronous presentation of interoceptive activity with an external object was shown to facilitate its attribution to oneself. Here we tested the reverse, i.e. whether one’s interoceptive signal can be attributed to an external source if presented in an asynchronous way. Seventeen healthy participants were scanned (3T MRI) while carrying electrocardiogram (ECG). During scanning, subjects were listening to sounds presented either in synchrony or out of synchrony to their ECG. After a sequence of sounds (30-50 beeps) participants had to judge whether this signal was generated from themselves (“Mine”) or by someone else (“Other”). We found same frequencies of Mine/ Other attributions across synchronicity conditions (GOF $\chi^2$=8.3, $p=.93$). Reaction times were neither mediated by synchronicity (F=1.42, $p=.23$) nor by Mine/Other attributions (F=.01, $p=.98$); rather, they were predicted by the accuracy in attributions (Sync-Mine, Asyc-Other; $b=-1.31$, [CI]=[-2.41,-0.22], $p=.03$, $R^2=0.14$). The fMRI pointed to the activation of the salience network (insulas, mid-anterior cingulate cortex) and cerebellum during the attributions (conjunction Mine-Other, cluster-level FWE $p< .05$). The L cerebellum was further activated (cluster-level FWE $p< .05$) for the Syc-Async conjunction. When the L cerebellum was used as a seed in a psychophysiological interaction analysis, “Other” attributions showed increased functional connectivity between this region and then R insula (mean beta= 3.74), while for “Mine” attributions this connectivity was decreased (mean beta= -3.18). Our results show that interoceptive signals can be attributed to external sources with the salience network mediating this attribution, and provide empirical support to current theories on interoceptive subjectivity.
Impaired recognition memory in Alzheimer's disease (AD) mainly rely on deficient recollection while familiarity is relatively preserved. Built on fluency cues (i.e. ease of processing), familiarity provides a sense of strength of a memory trace. In a word recognition task, false recognitions of unlearned words can be elicited by the prior masked presentation of the same word or semantically related primes. Structural links in semantic memory are impaired in AD following a hierarchical order with taxonomic links (within the same category, e.g. dog-cat) being more rapidly impaired than thematic links (concepts often co-occurrent, e.g. hairbrush). In our study, 17 early-stage AD patients and an age-matched control group performed a word recognition task in which the test word was preceded by a 33-ms prime perceptually (repetition) or semantically (taxonomic, thematic) related, or unrelated. Previous research using thematic and taxonomic priming in a naming task demonstrated a taxonomic hyperpriming in early-stage AD due to the impairment of distinctive attributes between concepts (bringing them conceptually closer). Our results did not show such hyperpriming effect, but showed a repetition and thematic priming effect on the production of false recognitions. This is consistent with the preservation of repetition and thematic links in early-stage AD, as priming effects on false recognitions only occurs if the prime-target link exists. While the lack of taxonomic priming effect still confirms the impairment of these links, such impairment does not translate into hyperpriming (here related to false recognitions) as it does in semantic recognition tasks.
Using the smartphone as a research tool for digital phenotyping:  
Use cases with the mobileDNA application  

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(1) UGent

With the increasing adoption of the smartphone by people of all ages (Digimeter, 2020), the use of smartphone logging applications, such as the in-house developed “mobileDNA application”, is interesting for research and various use cases. Smartphone research often relies on participants’ self-reports, but objectively logging smartphone use results in more accurate and valid data. To study the difference between objective and subjective measures, 40 Flemish ‘digital natives’ (mean age = 20) installed the application for two weeks and estimated their average daily smartphone use. On average, people overestimated their smartphone use with 30 %, showing that these subjective estimations can be detrimental for data quality in smartphone research. For another case we started from the idea that due to gradual ageing of the population, the number of people with ‘mild cognitive impairment’ (MCI) and Alzheimer Dementia (AD) will drastically increase in the coming decades (Eurostat, 1999). Nowadays, cognitive decline is assessed (too late) through obtrusive paper-and-pencil tests, often followed by expensive neuroimaging scans. As elderly own and use a smartphone more frequently (Digimeter, 2020), we want to unobtrusively analyse their user behavior on the smartphone and unravel alarming changes that could predict cognitive decline over time. We believe that, complementary to standard cognitive tests and sensor measurements, algorithms based on this “digital phenotype” could help in the early detection of MCI and AD, potentially slowing the cognitive decline. Altogether, we show the potential of using mobileDNA for digital health and wellbeing research, offering reliable measurement of actual smartphone use and the detection and monitoring of particular smartphone patterns and changes for digital phenotyping.
Giving the serious short- and long-term consequences of school bullying on children’s health, several anti-bullying programs have been developed and evaluated all around the world. Even if some of them have been found effective to reduce bullying and victimization, almost no research has studied the underlying mechanisms that leads to this reduction. The aim of our project is to better understand how these anti-bullying programs work. Perceived norms, empathy, attitudes towards bullying, and self-efficacy are some of the most studied factors in association with bullying and defending behaviors. However, very few studies have tested if changes in those factors following the implementation of an anti-bullying could explain change in student social behaviors. In this poster, we present our research protocol that will be used to test our theoretical model. Concretely, we will follow the implementation of KiVa in the French-speaking part of Belgium with a longitudinal design. For each student, we will measure bullying, victimization and defending behavior, the level of empathy, attitudes towards bullying, self-efficacy to defend, and the perception of the norms created by peers and the teacher. Implications for prevention programs will be discussed.
Does exposition to novel scenes improve subsequent verbal memory?

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The current study tested the hypothesis that exposure to novel stimuli promotes performance in a subsequent word learning task, particularly by improving recall of superficially encoded words compared to deeply encoded words. Moreover, we considered relationship with novelty seeking and curiosity personality traits. Thirty-two young participants were exposed to familiar versus novel scenes for an indoor/outdoor judgment task before performing a memory test (deep versus shallow encoding of words, followed by recall and recognition memory tasks). The results showed that, contrary to predictions, the condition (familiarity versus novelty) did not have any significant effect on recall nor recognition scores. Even though deep encoding lead to better recall and recognition scores than shallow encoding, there was no significant interaction between condition and encoding type. This could be due to a global failure of the scene task to induce novelty detection as participants processed novel scenes as rapidly as familiar scenes. Nevertheless, correlations analyses indicated that participants who spent more time on novel than familiar scenes recalled more deeply encoded words. But participants who spent more time on novel than familiar scenes recognized less superficially encoded words after the novelty condition compared to the familiar condition. Personality traits did not correlate with any measure. The lack of a group-level novelty effect could be explained by the materials used. Indeed, the scenes presented might not have sufficiently stimulated the feeling of novelty.
Stress and Trauma within the Criminal Investigation Department: 
The particular case of the vice squad inspectors

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(1) ULiège

Police inspectors, by the nature of their work, constitute a population at high risk of exposure to potentially traumatic events. Whether they are organizational (working conditions, lack of manpower, etc.) or operational (elements specific to interventions), the risk factors are numerous and require police officers to implement coping strategies to deal with these daily demands. However, these strategies are not always adapted and may therefore lead to the development of post-traumatic stress disorder. Twenty-six police inspectors from the vice squad were surveyed using questionnaires and structured clinical interview to assess compassion fatigue, secondary traumatic stress and coping strategies. The majority of police inspectors generally engage in appropriate coping strategies in the course of their work. However, despite this adequate personal functioning when faced with these potentially traumatic work situations, 65% of the participants experienced secondary traumatic stress. This is observed by the presence of burnout, which is more intensely felt in contact with citizens, victims or perpetrators. It is essential to implement preventive interventions with this at-risk population. Indeed, the results show suffering and fatigue related to the working conditions of these vice squad inspectors. Future programmes should promote the establishment of a favourable environment and help reduce the occurrence of stress reactions in order to better prevent the development and maintenance of post-traumatic stress disorder in police officers.
Stress, defined as the body's emotional and physical responses to a particular situation, is highly prevalent in children. According to UNICEF (2014), more than one in three children are emotionally distressed and have experienced significant anxiety and stress feelings that lead them to seek medical attention. It is therefore crucial to be particularly attentive to these warning signals of discomfort and to implement solutions that will enable them to better apprehend these stressful situations, to understand their physiological functioning and to better manage their emotions. The principle of heart rate variability biofeedback is based on the hypothesis that stimulation of the vagal system will lead to an improvement in the heart rate variability level and thus allow, through regular training, better emotional regulation and a significant reduction in stress levels. While this technique, in addition to being easily implemented and affordable, seems to provide many benefits to children, only few valid and well-controlled studies have so far investigated the effects of combining biofeedback and cardiac coherence exercises. Indeed, in a recent systematic review, only about ten articles could be identified. However, the analysis of these articles has enabled us to highlight the significant beneficial effects of heart rate variability biofeedback techniques, and particularly on children with anxiety disorders and/or hyperactivity and concentration problems. These results will be detailed and discussed, and the perspectives of using this technique specifically for children and adolescents will be considered.
Black people are a social category that is more rarely the sole focus of research in France (Ndiaye, 2008) and in the professional world (Amadieu, 2008). Black people are strongly discriminated against even when their high level of qualification is recognised (Martens et al., 2005). The chances of getting a job for a person with a black skin colour are 23% lower than for a Caucasian person (Amadieu & Roy, 2019). The darker the skin colour, the worse the discrimination (Hall, 2017). Black skin colour carries specific discrimination and stereotypes (Hamilton & Sealy-Harrington, 2017). This unequal treatment associated with gender varies according to the sector, so black women are over-represented in the personal assistance professions but under-represented in others, both situations being the result of discriminatory practices (Gatugu, 2017). In order to examine the singularity of discrimination against black women, this research evaluates the personality traits that are attributed to black, mixed-race and white women in Belgium. The hypothesis is that ethnic stereotypes have a differential valence between white and black women in Belgium. This study mainly used the "checklist method" as well as an archetypal black woman scale and the free association of traits.
Symbolic number ordering and its underlying strategies examined through self-reports

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Symbolic number ordering has been related to arithmetic fluency; however, the nature of this relation remains unclear. Here we investigate whether the implementation of strategies can explain the relation between number ordering and arithmetic fluency. In the first study, participants (N=16) performed a symbolic number ordering task (i.e., “is a triplet of digits presented in the order or not?”) and verbally reported the strategy they used after each trial. The analysis of the verbal responses led to the identification of three main strategies: memory retrieval, triplet decomposition, and arithmetic operation. All the remaining strategies were grouped in the fourth category “other”. In the second study, participants were presented with a description of the four strategies. Afterwards, they (N=61) judged the order of triplets of digits as fast and as accurately as possible and, after each trial, they indicated the implemented strategy by selecting one of the four pre-determined strategies. Participants also completed a standardized test to assess their arithmetic fluency. Memory retrieval strategy was used more often for ordered trials than for non-ordered trials and more for consecutive than non-consecutive triplets. Reaction times on trials solved by memory retrieval were related to the participants’ arithmetic fluency score. For the first time, we provide evidence that the relation between symbolic number ordering and arithmetic fluency is related to faster execution of memory retrieval strategies.
The moderating role of maladaptive schemas in the relationship between trauma and psychopathology in patients with alcohol use disorder

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(1) VUB; (2) Alexianen Zorggroep Tienen

Despite the high prevalence of traumatic experiences in patients diagnosed with alcohol use disorder (AUD), the relationship between trauma and AUD remains largely unclear. Patients with AUD and a co-morbid trauma-related disorder seem to show more impaired functioning and have a greater chance to relapse. Early maladaptive schemas (EMS), which are cognitive structures originating in childhood, are seen as precursors of psychological maladjustment and may serve as a moderator in the complex relationship between traumatic events and psychopathology. This research aims to enhance the understanding of the complex relationship between trauma, EMS and degree of psychopathology. Considering the existing gender differences in not only AUD symptoms but also in cognitive vulnerabilities, we will also look at differences between male and female patients with an AUD. 464 inpatients (M=325, F=139) diagnosed with AUD were recruited. Severity of psychopathology will be examined by the SCL-90, the presence and degree of maladaptive schemas by the YSQ-SF and the occurrence of traumatic experiences by the TEC. We expect that the severity of psychopathology in AUD patients is related to traumatic experiences, as well as to the presence of maladaptive schemas. Further we expect an interaction effect to occur, namely that in the case of more intense schemas, a more severe pathology will occur, indicating the moderating role of maladaptive schemas in the relationship between trauma and psychopathology in patients with AUD. Further, we will explore whether there are differences in these relationships in males compared to women.
Context effects in numerosity processing: the configuration of the numerosity comparison task affects the performance at the level of the single trials

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(1) KU Leuven

In the field of numerical cognition, the numerosity comparison task is considered the eligible method to assess non-symbolic numerical representations. The performance in this task is considered to be related to more complex numerical skills and mathematics, both in children and adults. Despite the prevalent assumption that numerosity comparison might be employed as a pure index of non-symbolic numerical representations, a growing body of research demonstrated that the global configuration of stimulus-related features, something we will refer to as contextual features, might influence the way numerosity is processed at the level of a single trial. Here, we present two studies aimed at exploring how context affects the performance at the level of the single numerosity comparison trial. The results of our first study show that the more complex the pattern of covariation is between numerical and non-numerical cues (e.g. total surface), the more participants will rely on numerical representations to solve the task. In a second study we found that participants’ ability to judge numerosity in the exact same trials differed when respectively more difficult or easier filler trials were included in the experiment. Our results suggests that contextual factors should be taken into account when interpreting the performance in a numerosity comparison task and its relation with mathematical achievement.
Symbolic behavior, relational information and feature transfer

Martin Finn (1) and Jan De Houwer (1)

(1) UGent

Symbolic behavior is a key feature of human cognition. Our capacity to effectively respond to the environment is expanded by symbols which communicate how stimuli and/or events are related. This is perhaps most obvious when we leverage relational information that enables us to respond to never before experienced events in terms of previously experienced events (e.g., deciding not to drink a something when told that it “tastes like [reader’s aversive stimulus of choice].“). However, leveraging relational information is a complicated affair, as highlighted by the observation that when stimuli are related not all features of stimuli transfer. This raises the issue of how relational information interacts with feature transfer, and the role symbols play in this interaction. To investigate this issue we conducted series of experiments designed to produce symbols which communicated specific relational information. We employed a paradigm based on car races. The paradigm had two components: i) a sample racecar screen which showed the performance of a sample racecar, and used experimentally engineered symbols to communicate how the performance of each real racecar would compare with that of the sample racecar, and ii) a car race screen showing the real racecars race. Two symbols were established as cues for the relations of same and different, and two symbols were established as cues for the stimulus features speed and direction. The results from these experiments demonstrate symbolic control over the selective transfer of stimulus features, and have implications for the study of relational information in complex settings.
Losing the self in near-death experiences: The experience of ego-dissolution

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Many people who have had a near-death experience (NDE) describe, as part of it, a disturbed sense of having a “distinct self”. However, no empirical studies have been conducted to explore the frequency or intensity of these effects. We surveyed a total of 100 NDE experiencers (i.e., Near-Death-Experience Content [NDE-C] scale total score ≥27/80). Eighty participants had their NDEs in a life-threatening situation and 20 had a NDE not related to a life-threatening situation. Participants completed the Ego-Dissolution Inventory (EDI) and the Ego-Inflation Inventory (EII) to assess the experience of ego-dissolution and -inflation potentially experienced during their NDE, respectively. They also completed the Nature-Relatedness Scale (NR-6) which measures the trait-like construct of one’s self-identification with nature. Based on prior hypotheses, ratings of specific items pertaining to out-of-body experiences and a sense of unity were taken from the NDE-C and used for correlational analyses. We found higher EDI total scores compared with EII total scores in our sample. Total scores of the NDE-C scale were positively correlated with EDI total scores and, although less strongly, the EII and NR-6 scores. EDI total scores were also positively correlated with the intensity of OBE and a sense of unity. This study suggests that the experience of dissolved ego-boundaries is a common feature of NDEs.
Poster 58
(eligible for poster prize)

Investigating oscillatory dynamics and theta phase connectivity in instructions implementation

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Implementing novel instructions is a complex and uniquely human cognitive ability, that requires the rapid and flexible conversion of symbolic content into a format that enables the execution of the instructed behavior. Preparing to implement novel instructions, as opposed to their simple maintenance, involves the activation of the instructed motor plans, and the binding of the action information to the specific context in which this should be executed. Recent evidence and prominent computational models suggest that this efficient re-configuration of the system critically relies on frontal theta oscillations in establishing top-down long-range synchronization between distant and task-relevant brain areas. In the present study, we compared the electrophysiological brain activity elicited by the maintenance of novel S-R mappings and the proactive preparation for their implementation. We replicated previous findings showing oscillatory features emerging specifically in response to the implementation demands. Crucially, preparing to implement novel S-Rs also induced a higher degree of connectivity in the theta frequency range between medial prefrontal and motor areas, as compared with simply memorizing the S-Rs. This finding supports our hypothesis that the behavior-guiding format is, at least partially, achieved by means of the modulation of connectivity patterns between relevant brain areas.
The validation study of the Spanish short version of the
“Health Literacy Survey Questionnaire”

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Health literacy (HL) is defined as one’s ability to find, understand and use health information. The examination of health literacy has practical implications including the understanding of health behaviours variability. The aim of this study is to validate a Spanish translation of a short version (12 items) of the “Health Literacy Survey Questionnaire” (HLS-Q, Pelikan, Ganahl, Van den Broucke & Sørensen, 2019) and to identify whether it can be used in both Peruvian and Spanish populations. A minimum of 400 adults (18+) of Peruvian and Spanish nationality will be recruited. The questionnaire will be composed of the HLS-Q, the Cancer Health Literacy Test, the Spanish Health Lifestyle Questionnaire, and the Social Desirability Scale. A forward-and-backward translation has already been completed. The consensual nature of the translation will be investigated through a qualitative study. Participants will be asked to provide comments regarding their understanding of the health literacy items. If major differences are detected, the questionnaire will be revised, and the process repeated. Quantitative analyses will be conducted to assess the psychometric properties of the instrument. A confirmatory factor analysis will check the unifactorial structure of the scale. We will also investigate the internal consistency and the convergent validity by computing Mcdonald’s Omega and correlation coefficients respectively. We expect a similar comprehension of items among Peruvian and Spanish samples, as well as a robust convergent validity. The validation of this instrument in the Spanish language will strengthen future research on health literacy in Spanish-speaking populations.
Towards the most Prägnant Gestalt: Contextual influences on simplification and complication tendencies

Liesse Frérart (1), Eline Van Geert (1) and Johan Wagemans (1)

(1) KU Leuven

The Law of Prägnanz states that each organizational process will always be as ‘good’ as the prevailing conditions allow. Good organization can be achieved by removing unnecessary details or weakening certain features (i.e., simplification) or by making certain features of a Gestalt stand out (i.e., complication). We investigated whether the importance of a feature for discrimination within a specific context, influences whether simplification or complication of that feature occurs. We hypothesize that a feature which is important for discrimination will be complicated and a feature which is not important for discrimination will be simplified.

In an online experiment, participants were asked to reconstruct one out of four figures using basic shapes, such that someone else would be able to recognize it among the other figures. For each figure, two dimensions were defined, one of which contained more variability across the four presented figures than the other. In the close context, target and distractors differed only quantitatively on those dimensions, whilst the figures were qualitatively the same. In the far context, target and distractors were qualitatively different. The data are currently being analyzed. We expect that in the close context, the most variable dimension will be complicated, whilst the other one will be simplified. In the far context, we expect simplification of both dimensions. These results could demonstrate the contextual dependence of perceptual and cognitive organizational tendencies like simplification and complication, more specifically the relevance or irrelevance of certain stimulus features for discrimination within a specific task context.
Executive deficits and language performance in children with developmental language disorder: The impact of the executive load

Soléane Gander (1), Lucile Arnaud (1), Hugo Quémener (1), Alexandru Dumitrescu (1), Cécile Colin (1) and Charline Urbain (1)

(1) ULB

Accumulating evidences have highlighted reduced verbal and non-verbal executive functions (EF) performance in children with Developmental Language Disorder (DLD), suggesting that EF may be particularly at risk in this population. Yet, the involvement of executive deficits on language performance in children with DLD remains highly controversial. To specifically assess the impact of the executive load on language production skills in children, 12 DLD and 14 typically developing (TD) children (8-11 years) performed a semantic fluency task including two executive load conditions triggered by low or high levels of selection demands among competing alternatives. They also performed a set of non-verbal executive functions (i.e. working memory, inhibition and flexibility) tasks. Results revealed that, compared to TD children, DLD showed poorer performance in working memory (p=.023) and inhibition (p=.002). Regarding semantic fluency, a mixed ANOVA showed a significant main effect of Group (DLD<TD; p<.001) and Condition (low<high; p<.001) and a significant interaction effect (GroupXCondition; p<.001). Post hoc analyses revealed a significant difference in semantic fluency performance between the DLD and TD children in the high (p<.001) but not in the low (p=.129) load condition. In addition, in the high load condition, correlation analyses showed that semantic fluency difficulties were associated with lower inhibition performance (τ =-.30, p=.042). Together, our results suggest that language performance of children with DLD may be affected by their executive weaknesses in a high executive load condition and highlight the importance of considering the executive load level of language tasks in the context of DLD assessment and care.
Effect of text choice on reading motivation and engagement and on cognitive abilities

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(1) ULB

Recently, it has been shown that several motivation constructs predict unique variance of academic achievement growth in students, even after controlling for intelligence and personality. Among them, autonomy explains a unique portion of variance in academic achievement. Here, we focused on reading motivation. In that case, autonomy is defined as the perception that one has on reading choices. We examined the effect of choice in text reading on habitual and situational recreational reading motivation and engagement, and on cognitive abilities (i.e., novel word learning and reading comprehension). Two groups of participants were asked to read a short story. Half of them chose between five short stories which one they wanted to read whereas half of them were assigned to a short story, without choice. Overall, we found no significant effect of text choice on motivational and cognitive variables. However, the data showed that the scores of habitual motivation were higher in students than in employees and retired people. Moreover, when participants were used to read informative books, they had a higher number of correct responses in semantic learning of new words. Furthermore, we found that narrative book reading seems to have a positive effect on the amount of print exposure in leisure time compared to informative and comics book reading. Finally, the participants who read the least in their leisure time seemed to be the ones who were the most motivated and engaged during the text reading of the experiment (especially on situational and habitual reading engagement measures).
Informal caregiving refers to providing unpaid assistance to a relative or friend who has a disease or a disability. The assumption that providing informal care leads to deleterious health outcomes is widespread and commonly accepted. However, several comments have been made about the need to question this belief. To put this assumption to test, the Belgian National Health Survey from 2013 was used. In this nationwide sample (N = 6500), the association between informal care and mental health was investigated through the GHQ-12 and the SCL (depression, anxiety, and sleep subscales). Three complementary comparison were performed: (1) between informal caregivers and non-caregivers; (2) between informal caregivers at home, outside of home, and non-caregivers; (3) between informal caregivers providing care for more than 20 hours a week, those providing between 1 and 20 hours a week, and non-caregivers. Significant differences were controlled for gender, age, and perceived quality of social support. Overall, the results show that, with a population-based point of view, informal caregivers are not particularly at risk. Few comparisons were statically significant, and when they were, the effect sizes remained low. Far from settling this debate, these results rather suggest that the key point might lie elsewhere, as informal caregivers represents a diverse population in itself. Therefore, the focus should probably not be on the sole investigation of the differences between informal caregivers and the general population, but rather on how and why some caregivers differ from other caregivers and how such difference can represent a risk for them.
**Categorical Perception and Generalization in individuals with and without Autism Spectrum Disorder**

Birte Geusens (1), Jaana Van Overwalle (1) and Johan Wagemans (1)

(1) KU Leuven

Every day people are exposed to a vast amount of visual information. Categorization and discrimination (i.e., categorical perception) are essential processes to reduce this information overload and to allow to process the information in a more efficient manner. Individuals with Autism Spectrum Disorder (ASD) are thought to have problems with categorization, which could lead to reduced generalization to new situations. This study investigated category learning, discrimination and generalization of artificial forms in individuals with ASD, compared to individuals without ASD. To investigate differences in category learning, participants performed a two-alternative forced choice (2AFC) task in which they had to categorize artificial forms into two groups. No significant differences were found in category learning between individuals with and without ASD. To investigate differences in discrimination, participants performed a same-different task before and after category learning. The results of the discrimination task revealed narrower tuning of the discrimination peak after category learning and this was especially the case for participants with ASD. Finally, to investigate generalization, participants performed the 2AFC categorization task again, once on an extended version of the training stimulus set and once on a new stimulus set with the same properties as the original training stimulus set. However, no significant differences in generalization were found between individuals with and without ASD. These results indicate that, although there is no difference in the learning phase itself or in generalization, category learning enhanced the sensitivity of categorical perception especially in participants with ASD compared to participants without ASD.
School in the covid-19 crisis: Teachers’ support on students’ well-being and school motivation

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(1) UCLouvain; (2) ULiège

In Belgium, the covid-19 crisis has led to the closure of schools from 16th March 2020. In secondary education, from 18th May 2020, some grades (mainly grades 8 and 12) have been allowed to return to school twice a week. On September 1st 2020, all secondary education students went back to school on a full time basis, but have had to wear facial masks and respect certain sanitary rules. Two surveys were conducted – in June 2020 (N= 6015) and in October 2020 (N=2423) – to assess students’ well-being and motivation during school closure and reopening. The aim of this contribution is to underline the impact of teachers’ emotional and educational support on students’ well-being and school motivation during this crisis. Indeed, teachers’ support is referenced in the literature as an important source (among others) of students’ well-being and school motivation (Galand & Philippot, 2005 ; Engels et al., 2016 ; Janosz et al., 1998). In our studies, we collected data about perceived teachers’ support, frequency of this support, students’ well-being, student’s schoolwork values and student’s self-efficacy. In June as in October, significant correlations were found between the frequency of teacher’s support and students’ feelings. Analyzes also show that teachers’ support positively predicts students’ self-efficacy in general and students’ self-efficacy regarding the pandemic situation and that teachers’ support influences students’ schoolwork values. Students’ comments at the end of the surveys highlight their need to speak with the teachers about their feelings regarding covid-19 crisis and its impact on their life and schoolwork.
Assessment of the impact of a training program including e-learning and role-plays on third years psychology students’ communication skills

Manon Goosse (1), Fanny Kreusch (2) and Sylvie Willems (1,2)

(1) ULiege; (2) Liege University Psychological and Logopaedical Clinic (CPLU)

Given the importance of communication skills in the psychologist-patient relationship, several training programs have been proposed (2,3,4). These programs are time and cost-consuming, but little is known about their effectiveness in terms of actual communication skills (5). Therefore, this pre-post study aims to test the effectiveness of a training program involving an e-learning module inspired by the cumulative micro-training of specific helping skills (6) and 4 sessions of role-playing. Thirty third-year psychology students conducted a clinical interview role play before and after the training program. A blind expert evaluated: 1) objective communication skills as defined by Kuntz and colleagues (4); 2) perceived empathy with the CARE scale (Mercer, 2004); and 3) confidence in the clinician using a one-question Likert scale. The results show significant changes with moderate to large effects on several communication skills (e.g. more adequate reformulations, reflection of feelings ...). One unexpected decreased is observed regarding probing questions. Perceived empathy and confidence in the clinician were also higher in the post-test. Surprisingly, no correlation is found between objective skills and perceived empathy whereas a moderate positive correlation is found between objective skills and confidence enhancements. E-learning module with 4 role-plays-based training leads third-year psychology students not only to enhance their communication skills but also to improve the perceived quality of the clinical relationship. The lack of consistent correlation highlights the need to evaluate both the objective and subjective facets of communication.
Augmentative and Alternative Communication’s process from speech and language therapists’s opinion

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It is well established that speech and language therapists (SLT) play a central role in the Alternative and Augmentative Communication’s (AAC) process. However, numerous studies have highlighted many barriers to the participation of people with complex specific communication needs (e.g. Light & McNaughton, 2014). How do Belgian SLT go about the implementation of AAC? This study firstly explores critical steps in the process of implementing an AAC’s system, through Belgian speech-language therapists’s opinion. The research secondly aims to emphasize the challenges and facilitators they encounter in their clinical practice. Sixty-three Belgian French’s speaking SLT with various levels of experience in AAC participated in our study. Their clients are children with different types of disabilities under 12 years old. Qualitative and quantitative data were collected by an online survey (multiple-choice questions, open-ended questions, Likert scale). SLT report some facilitators and challenges at different stages of the AAC’s process 1) The process begins when SLT are considering AAC for a child (pre-assessment stage). Parents and environment were stressed as important nodes 2) After that, SLT collect information to test and select an appropriate system of AAC. Professional network is pointed out as a decisive element 3) Finally, SLT implement the system of AAC. They report facing obstacles to extend the use of AAC in all child’s environments. These results provide elements to understand consequences of the challenges on children’s participation. Belgian SLT’s opinion brings to light different levers of action to enhance the process of AAC.
Research on the determinants of health has shown significant links between the social context in which people live and their health. Within this literature, the “social cure” approach emphasizes the importance of social identification for mental and physical health. Although this approach has been intensively studied in psychology, it has mainly been applied to clinical settings, and less in prevention and health promotion. The current study aims to perform a systematic review of the social cure approach applied to health related behaviours. A review will first be performed on published systematic reviews on the social cure approach applied to health promotion. Next, a systematic review of primary studies will be performed following the PRISMA guidelines, using pre-defined search terms to identify studies on the relation between social identification and health behaviours in research databases (Psychinfo, Scopus, Embase, Pubmed). Relevant articles will be selected using pre-defined inclusion/exclusion criteria, checking for interrater reliability. Additional published studies will be retrieved from the reference lists. In addition to a narrative review a meta-analysis will be performed, using odds ratios and/or R² as standardized effect size indicators. We expect the combined studies to show a medium to strong effect size for the relation between social identification and health behaviours. Current stage of work: Three systematic review investigating the relation between social identity and health have been identified for the review of reviews. A first round of the title-abstract selection is done. The consideration of social identification as a determinant of health related behaviours could improve health promotion practice.
Specific executive functions predict 6-month functional decline in non-institutionalized older adults

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Functional decline is a public health challenge, with functional health predicting the length of hospitalization, readmission rates, patient living situation (e.g. home, institution, rehabilitation), and mortality. This raises urgent questions of prevention, early diagnosis, and potential healthcare interventions. Executive functioning, also shown to decline with age, is progressively emerging as a correlate of functional decline in older adults and a promising target for interventions. This study investigated the role of five executive functioning facets in predicting functional decline. Higher levels of inhibition, updating, flexibility, category fluency, and planning were expected to be significantly associated with less functional decline after six months. At baseline, participants (N=137), aged 75-93 (M=81.77, SD=4.26), completed a neuropsychological assessment and two measures of functional decline: the Katz Index of Independence in Activities of Daily Living (ADL) and the Lawton Instrumental Activities of Daily Living Scale (IADL). The same two measures were taken at a six-month follow-up by telephone. Functional decline for each scale was operationalized as a one-point increase in scores between baseline and six months. The likelihood of showing functional decline was calculated through two respective logistic regression models. The results revealed that lower inhibition and higher updating scores were significantly associated with Katz ADL, while lower flexibility and semantic fluency tasks predicted Lawton IADL, when controlling for age, sex, education, neurological condition, medication use, and Fried score. Our findings contribute to the emerging evidence that executive functioning modulates functional decline and are discussed in light of accessible interventions to promote functional health.
Mobilization of collective memories of the Belgian colonisation, conception of moral status and collective actions of associations of African descents in Brussels

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In the global context of claims addressed by minorities to majorities for the recognition of the European colonial past, we studied the specific claim for recognition of the Belgian colonial past addressed by associations of African descents to Belgium. More precisely, we studied their speeches to apprehend the processes of 1) mobilization of collective memories and 2) the conception of moral status. In order to do so, we interviewed ten members of associations and we ran an exploratory thematic analysis of their speech. Results showed, among other things, that the struggle for recognition of the collective memory of the African descent population and, therefore, of the exactions committed by Belgium during the colonisation was a part of the main struggle for recognition of African descents as Belgium citizens, a status that would allow them to have the same rights and the same visibility within the public sphere and that would also reduce racism within the Belgian society. In the context of that specific struggle for recognition of the colonial Belgian past, those associations seem to underline the status of positive agent -actor of moral actions- and the status of victim -the recipient of evil actions- in their speech. The significance of historical figures depicted as resistant and agentic such as Patrice Lumumba have also been noted. Future researches should study the perception and receptivity of the associations' audience in order to have a global vision of the intergroup dynamic in the context of the Belgian colonial past.
The effects of cognitive load on cognitive fatigue in early Multiple Sclerosis: Preliminary results

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Cognitive fatigue is one of the most frequent and debilitating symptom of Multiple Sclerosis (MS). While it is well established that MS patients show performances decrement during/following a long cognitive task, only few studies investigated the effects of cognitive load on MS-related fatigue. The present study aim at exploring the effects of cognitive load on performance decrement and pupil variations in MS. Thirteen patients with early MS (disease duration <5) and 12 matched healthy subjects performed a dual-task in cognitive load conditions (low and high). High cognitive load was adjusted to individual resources by determining the fastest presentation rate leading to at least 85% accuracy; the low cognitive load condition is 50% slower. Additionally, pupil size variations were obtained during the task for 6 patients and 7 controls. Repeated measures ANOVA were performed to determine the group, time and cognitive load effects on averaged performances and pupil size. Supplementary analysis were conducted on performances using Bayesian statistics. ANOVA on performances revealed an effect of condition (F(1,20)=37.79, p<.0001) and time (F(3,20)=13.32, p<.0001) but no effect of group nor interaction effects. Bayesian statistical analysis revealed an absence of difference in performances’ evolution between groups (BF01=5.71). ANOVA for pupil size revealed a tendency to significance for the group*condition interaction (p=0.077). In the present study, MS patients did not demonstrate larger fatigue effects on performances than control when the task is adapted to individual resources. The lack of pupillary response to cognitive load seems to reflect cognitive fatigue in patients despite behavioral compensation.
Helping behaviors, acting in a way that benefits others, comprise a wide variety of actions that can be defined and categorized in many ways. Recent research has shown that “Giving” behaviors (akin to volunteerism and philanthropy) and “Doing” behaviors (like activism) are associated with distinct motives. However, to date, adequate tools for measuring helping behaviors are still lacking. We propose a new Giving and Doing Behaviors Scale (GDBs).

Using Thomas and McGarty’s (2018) terminology, we conducted two studies to create a Giving and Doing Behavior scale, comprising two dimensions: Giving and Doing behaviors. Study 1 aimed to collect a set of behaviors to generate the scale’s items. Using an existing database of interviews conducted on volunteers engaged in humanitarian actions toward refugees in 2015 in Belgium, we gathered a thorough list of behaviors that were submitted to participants’ assessment on the two dimensions of interest. Statistical analyses were used to preselect the items that best represented the two dimensions. Study 2 aimed at testing the scale’s reliability and two-factor structure assumption. We also explored motives related to Giving and Doing behaviors. Study 2’s results revealed a two-factor solution, suggesting that it is indeed pertinent to distinguish helping behaviors in terms of Giving and Doing. Moreover, results indicated that different motives appeared to be responsible for Giving and Doing behaviors.
Measuring attentional bias in an alcohol-related virtual environment: A feasibility study

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Substance-relevant cues sometimes become the focus of attention and elicit substance-seeking behavior in the environment. This shift in attention allocation, called “attentional bias”, appears to be due to neurobiological and motivational processes leading alcohol-related stimuli to acquire incentive-motivational properties that can trigger craving and consumption (Field & Cox, 2008; Robinson & Berridge, 1993). Attentional biases have typically been assessed using attentional tasks as the addiction Stroop task (Cox et al., 2006) or the visual probe task (van Hemel-Ruiter et al., 2016), sometimes coupled with eye-tracking devices (Bollen et al., 2020; van Duijvenbode et al., 2017). However, the presentation of one single pair of stimuli or another more or less complex pattern of stimuli cannot be considered an adequate reflection of the complexity of real-life substance use situations (Hertel & Mathews, 2011). To increase the ecological validity of the task, we jointly used an eye-tacking device during the immersion in a virtual environment that includes multiple alcohol-related cues. We investigated the specific cues that may be related to attentional bias during free exploration of an alcohol-related environment. Finally, we investigated whether attentional bias is related to subjective craving and alcohol consumption. To this end, 30 social drinkers were recruited and exposed to a virtual bar. All of them completed a set of questionnaires before and after the virtual experience, including a craving scale. The data actually allowed us to identify the relevant items for the study of attentional biases.
Investigation of the neural networks underlying inhibition across verbal and visual domains

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Inhibition is a central component of executive control as it allows ignoring irrelevant information, thereby facilitating the focus on relevant ones. The nature of inhibitory control mechanisms remains an open question, and particularly the domain-specificity of these mechanisms. This fMRI study investigated the neural networks associated with the inhibition of phonological, semantic and visual distractors in a target-probe matching task. 37 adult participants (20-40 years old) were placed in an MRI scanner and performed a similarity-judgement task in which they had to judge which item out of two probes was the most similar to two target items. In the facilitation condition, the correct probe item was preactivated via a prime appearing briefly before the trial; in the inhibition condition, the prime preactivated the wrong probe item, which then had to be inhibited for correct response selection. We will determine the commonality and differences of univariate neural networks associated with the inhibition condition for the phonological, semantic and visual task modalities. Furthermore, via multivariate voxel pattern analyses, we will examine whether neural patterns distinguishing inhibition vs facilitation in one modality allow to predict the same distinction in another modality. Such cross-modality prediction would be evidence for domain-general inhibitory mechanisms in executive control. Analyses are on-going and preliminary results will be presented.
Individual differences in visual working memory and their relation to the perception and appreciation of order and complexity

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It has been hypothesized by many researchers that aesthetic appreciation is not only based on stimulus properties or individual differences, but rather that it is the compatibility between stimulus and person characteristics that determines aesthetic appreciation. In support of this, recent evidence suggests that if an individual can handle the complexity of an artwork, this artwork is preferred over other less complex pieces. Based on this preliminary evidence, we hypothesize that aesthetic appreciation depends on the compatibility or the match between an individual’s working memory capacity and the visual complexity of a stimulus. In addition, we expect preferences for complexity to depend on the individual’s working memory load within a specific context. In the current study, 268 participants rated subsets of a parametrically controlled set of 1611 stimuli varying both qualitatively and quantitatively on diverse objective order and complexity dimensions (created using the Order and Complexity Toolbox for Aesthetics; OCTA). Based on these ratings, we categorized the stimuli into a 3x3 (low, moderate, high) order and complexity grid. In a follow-up study, a selection of the stimuli will be presented to participants in a dual-task format. The participants will have to perform a 2-alternative forced choice task in which they have to indicate their preferences for visual stimuli with or without working memory load. This study will allow us to examine how both individual and contextual differences in working memory capacity relate to the appreciation of order and complexity in a parametrically controlled stimulus set.
Are mirror images really more difficult to discriminate than plane rotations?  
A study based on the COR hypothesis.

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It is widely assumed that mirror images are more difficult to discriminate than plane rotations of the same object. However, this conclusion stems from studies in which arbitrary types of plane rotation (often 180 degrees) were compared to objects mirrored across both intrinsic (e.g., their axis of symmetry or elongation) and extrinsic (e.g., the gravitational vertical) axes. The goal of this study was to overcome these limitations. We used a “same-different” orientation judgement task with tilted asymmetrical 2D stimuli. The second stimulus of each pair could be the same as the first one or (1) have a different tilt direction (e.g., 20° CW vs. 20° CCW), (2) be rotated by 180°, (3) be mirrored across an axis intrinsic to object or (4) be mirrored across a vertical (extrinsic) axis. Like previous studies, we found that shapes tilted 180° were the easiest to discriminate. In addition, we found that shapes reflected across an intrinsic axis were not significantly more difficult to discriminate than those reflected across an extrinsic axis and that shapes differing in terms of tilt direction were the most difficult to discriminate. Thus, mirror images are not necessarily more difficult to discriminate than plane rotations. We discuss the implications of these findings for cognitive models of orientation representation.
Two concepts are usually considered for the study of regulatory skills: coping and emotion regulation (ER). Pediatric health conditions have been defined as major stressors and are mostly studied with coping models. Yet, emotional development includes more than just the regulation of stressful situations as children have to manage their emotions in many situations of life. Therefore, fully understanding and defining both regulatory processes in pediatrics is indispensable. In order to investigate the use of coping and ER concepts in pediatric psychology and estimate their degree of complementarity and overlap, we conducted a literature search in different databases (e.g., Embase, PsychInfo). Relevant literature including the terms “emotion regulation”, “coping” and “pediatrics” was identified. Coping is almost exclusively (98%) mentioned in included literature, as well as its link with stress (Lazarus & Folkman, 1984). Most references implicitly refer to ER as part of coping and do not mention any specific theoretical models of ER. Due to the lack of ER theories, it was not possible to establish a definition of regulatory processes including both concepts, nor was it possible to better understand the nature of their relationship. More general literature showed a partial overlap in conceptualisation and measurement of coping and ER (Compas et al., 2014, 2017; Delelis et al., 2011). This indicates that exclusively studying coping might be restrictive because it does not reflect the broad scope of regulatory processes of pediatric patients. Further examinations of the relationship between both concepts in pediatric psychology are necessary.
Well-being of workers in time of pandemic: A screening from University of Mons

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The COVID-19 pandemic has disturbed our habits in work. A lot of people are now working from home and the conditions for work can be very unequal. This situation can cause feelings of loneliness or other negative emotions, stress, anxiety, or depression. We conducted a study on the employees of the University of Mons (UMONS), and investigated their level of anxiety, depression, COVID-19-related perceived stress, positive and negative emotions, and work psychological health. We also questioned them about their work-relationships, workload, material working conditions, work-life balance, actual and future work conditions, and perceived competences. From 24 February 2021 to 26 March, 329 staff members of UMONS completed the survey. We analysed the data using nonparametric and chi-squared tests. We also used Spearman correlations between clinical variables, that showed significant correlations. Our results show moderate level of anxiety in our sample, but no sign of depression (evaluated by the HADS). Furthermore, 8.28% of the participants have high COVID-19-related perceived stress (evaluated by the PSS-10-C, translated in French by our team). We also found that 78.22% of the respondents have a good work psychological health (evaluated by EMMBEPT and EMMDPT). However, not all the employees have the same experience. Indeed, PhD students are more at risk to develop anxiety, depression, stress about covid or bad work psychological health. People whom hourly work have decrease following the pandemic have significantly higher score of depression than others. The loss of meaning in the face of an uncertain future, could be a link between these results.
Is the literature assessing the efficacy of the pharmacological and psychological treatments of the alcohol-deprivation effect underpowered?

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While adequate power and sample sizes are indispensable for the detection (by the statistical test) of a meaningful effect size (ES), many published studies in psychology do not describe sample-size calculation (SSC), which weakens the study methodological quality. Omission of SSC is often associated with a lack of prospective power, which exaggerates observed ES and increases the False Report Probability (FRP), thereby jeopardizing results reproducibility. Our purpose is to investigate in which extent this practice concerns the literature assessing the efficacy of the psychological and pharmacological treatments of the alcohol-deprivation effect (operationalized in an animal model). We will firstly select articles published from 1993 to 2020 using the database PubMed and check whether they mention a SSC. We will then classify the articles mentioning a SSC according to five components of a complete description of SSC (ex. power analysis with or without details). We will also check whether the hypothetical ES (used to determine sample sizes) is justified and the observed ES interpreted (discussion). Thereupon, in order to assess a possible ES overestimation in the selected literature, we will examine the relationship between the observed ES and the sample sizes. We will compute the “power-to-detect” of each relevant statistical test using small, medium and large ES (classifications). Finally, we will compute the FRP and the True Discovery Rate using a risk alpha of 1, 2.5 or 5%, the median “power-to-detect” and a representative range of pre-study odds (from 0.01 to 0.99), according to Ioannidis (2005) and Szucs & Ioannidis (2017).
Contributions of attachment and parenting practices on expression of ADHD symptoms in school-aged children: A study protocol

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Several studies observed an association between insecure and disorganized attachment and ADHD symptoms in clinical and community samples. Relationships between the child and his caregivers could minimize or amplify the effects of neurodevelopmental factors that underlie phenotypic expression of ADHD. However, few studies have investigated influences of confounding factors such as comorbidities, cognitive profiles, contextual factors or attachment assessment method. This ongoing cross-sectional study compares ADHD and typically developing children (TDC) aged 7 to 10 years old, and their parents. TDC are recruited from primary schools and youth movements. ADHD children are recruited from child psychiatry and child neurology outpatient clinics of two university hospitals. Inclusion/exclusion criteria are the presence of an ADHD diagnosis, absence of intellectual deficit (IQ > 80), epilepsy, prematurity or any neurological condition. Child assessment includes behavioral questionnaires rated by parents, measures of attentional and executive functions and emotional regulation. Child attachment is investigated using interview and self-report. Assessment of parents includes measures of mental health, ADHD and depressive symptoms, cognitive functions and attachment style. Parenting practices are assessed by parent self-report. The main objective of this research is to help disentangle contributions of parents-child relationships and cognitive characteristics on child ADHD symptoms, using an intergenerational perspective. The results could also allow developing efficient parenting-skill training programs to improve symptomatic expression of ADHD and reduce functional impairments. Trial registration: ClinicalTrials (NCT): NCT04337125.