

BAPS 2016

Theory * Practice = Innovation²

24.05.2016 ANTWERP

**Thomas More University College
Campus Sanderus**

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W elcome from the BAPS-president

As BAPS President it is my great pleasure to welcome all of you at yet another promising Annual Meeting!

The 2016 meeting is a special one, which adds another page to the long BAPS history. It is the first time we have our Annual Meeting in Antwerp, on the campus of Thomas More University College. In line with the college's mission to teach psychology to professional bachelors, based on translational research bridging the gap between new discoveries in the basic psychological sciences and practical applications, the overarching theme is Theory x Practice = Innovation². For those colleagues who are unfamiliar with university college education in psychology in Flanders, this choice may have come as a surprise but it fits the choice we have made to try to foster the collaboration between all subdomains of psychology, and to make our basic research more accessible to all psychologists in Belgium.

The response to our call for proposal has been overwhelming and we have been able to compose a tremendously rich program, reflecting the prosperous state of psychological research in Belgium, consisting of 2 keynote lectures, 4 invited symposia, 10 member-initiated symposia, 7 oral presentations, and 95 poster presentations. The program has attracted the large number of participants it deserves. The exact numbers will be communicated at the General Assembly Meeting, where I will also announce some new membership benefits and other innovative features that the Executive Committee is proposing.

I look forward to hearing about all of your most recent research findings, and to seeing all of you at one of the many occasions to meet and talk that are offered here in Antwerp!

Johan Wagemans
BAPS President

W elcome from the local organizers

As the organizing committee of this meeting, we welcome you to Antwerp, city of vivid multi-culturality and home base of the Thomas More department of Applied Psychology.

We are proud to organize this meeting and consider this BAPS-request as recognition of our long-standing research tradition in applied psychology. We will therefore proudly contribute to this meeting by presenting our current research projects from our department. Moreover, we are particularly pleased to welcome a conference titled “theory * practice = innovation²”. As a department of Applied Psychology, we hold a strong tradition in translating psychological science into practical solutions through solid ties with both psychological practice and theoretical research institutes. Consequently, our mission explicitly expresses our goal to bring innovation to society by bridging the gap between science and practice.

Few of you will question the premise that psychological research should preferably serve societal purposes. It seems clear that we can only bridge this span through close cooperation between theoretical psychologists, applied researchers and professionals. Therefore, we thank you for being here today and for contributing to this synergy.

It is only through this interaction between theory and practice that true innovation can be reached. Therefore, the theme of this annual meeting is a reminder of the strong bonds between theoretical and applied psychology, and an invitation to amplify and validate this cooperation in valuable research projects to deliver innovation² to society.

The local organizers of BAPS 2016

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Program in a glance

08.00 Registration & Preparations poster session

09.00 Welcome addresses

Johan Wagemans, President BAPS,
Peter De Graef, host BAPS 2016

09.20 Keynote address by Prof. Charles Sanislow

The RDoC Framework for Integrating Psychopathology Research

10.20 Coffee Break

10.50 Sessions 1 - 7

12.10 Lunch & Poster Session

13.00 General Assembly of the BAPS

13.30 Sessions 8 - 14

14.50 Sessions 15 - 21

16.10 Coffee Break

16.35 Best Master & Bachelor Thesis Award

17.00 Keynote address by Prof. Manos Tsakiris

The neurocognitive mechanisms of embodiment and self-identity

18.00 Best Poster Award & Reception

08.00	Registration & Preparations poster session (<i>Entrance hall</i>)						
09.00	Welcome addresses (<i>MOL 1.01</i>)						
09.20	Keynote address by Prof. Charles A. Sanislow (<i>MOL 1.01</i>)						
10.20	Coffee Break (<i>Entrance hall</i>)						
10.50	S1: Symposium Arithmetical knowledge: New insights (A. De Visscher) MOL 4.02	S2: Oral session Emotion & attention MOL 1.01	S3: Symposium Emotion and cognition in youth internalizing problems (M. Van Beveren) MOL 5.01	S4: Symposium Personality and non-suicidal self- injury (A. Gandhi, G. Kiekens, E. Pauwels, E. Sleuwaegen, & L. Claes) Conferentiezaal	S5: Symposium The effect of threat on belonging in (social) groups (J. Kende) MOL 3.01	S6: Invited Symposium Cognitive processes underlying pain (G. Crombez) MOL 4.01	S7: Oral session Cognition SAN 1.3
12.10	Lunch & Poster Session (<i>Entrance hall, Foyer, SAN 1.6, SAN 1.7</i>)						
13.00	General Assembly of the BAPS						
13.30	S8: Symposium Attitude formation and decision making (A. Mierop & A. Bret) MOL 4.02	S9: Invited Symposium Visual Consciousness (F. Van Opstal) MOL 1.01	S10: Invited Symposium Executive functioning in ASD during (young) adulthood (D. Baeyens) MOL 5.01	S11: Symposium The study of sexual violence (T. Vertommen) Conferentiezaal	S12: Oral session Social dynamics MOL 3.01	S13: Oral session Social behaviour MOL 4.01	S14: Symposium Mouse behavior in preclinical Alzheimer research (R. D'Hooge) SAN 1.3

14.50	S15: Oral Session Construction and application of a new cognitive ability test (M. Tierens) MOL 4.02	S16: Oral session Face perception MOL 1.01	S17: Symposium Parenthood: Stress and challenges (S. Galdiolo & S. Mazzone) MOL 5.01	S18: Invited Symposium Mechanisms underlying psychopathy (K. Uzieblo & I. Brazil) Conferentiezaal	S19: Symposium Sociocultural construction of emotions and well-being (A. Jasini, J. De Leersnyder, & B. Mesquita) MOL 3.01	S20: Symposium Psychology of respiratory symptoms (E. Vlemincx) MOL 4.01	S21: Oral session Learning processes SAN 1.3
16.10	Coffee Break (<i>Entrance hall</i>)						
16.35	Best Master & Bachelor Thesis Award (<i>MOL 1.01</i>)						
17.00	Keynote address Prof. Manos Tsakiris (<i>MOL 1.01</i>)						
18.00	Best Poster Award & Reception (<i>Entrance hall</i>)						

KEYNOTE ADDRESSES

Keynote Address

9u20 – 10u20

Room: MOL 1.01

The RDoC Framework for Integrating Psychopathology Research

Prof. Charles A. Sanislow¹

¹ *Wesleyan University, USA*

The U.S. National Institute of Mental Health (NIMH) Research Domain Criteria (RDoC) initiative offers a framework to facilitate integrative research to clarify core mechanisms of human mental distress and dysfunction. While innovative theories of major mental disorders (e.g., anxiety, depression, bipolar, schizophrenia) have facilitated empirical advances to understanding psychopathology mechanisms, and have led to the development of effective treatments, there is mounting consensus that progress could be accelerated. Specific problems are that translational clinical research has not kept pace with advances in behavioral neuroscience, and that the development of novel treatments has waned. Research progress may be hampered because current diagnostic systems based on clinical description include a lack of clear boundaries across disorders, heterogeneity within disorders, and seemingly arbitrary thresholds for pathology. RDoC offers an alternative approach, agnostic to familiar diagnostic categories, in order to free research from constraints that impose these problems. The form is a matrix of relevant domains and constructs across units of analysis, from genes to behavior, in which dimensions of various elements may be located. The goals are to facilitate new avenues of research that connect disruptions in internal mechanisms to clinical symptoms, and to ultimately inform the structure of future clinical diagnosis.

Keynote Address

17u00 – 18u00

Room: MOL 1.01

Models of the Self: Exteroception, interoception and social cognition

Prof. Manos Tsakiris¹

¹ *Royal Holloway University of London, UK*

The self is first and foremost situated within a body. The bodily self has therefore been the starting point for the science of the self. Studies of bodily illusions have shown how multisensory input can produce drastic changes in body-ownership, and the important consequence that such changes have for social processing. This interest in the processing of the exteroceptive signals that underpin awareness of self and others, has been at the expense of another side of embodiment - the unobservable, yet *felt*, interoceptive body. At the psychological level, research on interoception has focused on classic debates about the role of interoception in emotion. Beyond autonomic signaling and emotional processing, my recent research has tried to bridge interoceptive awareness of the body with changes in body-awareness that result from exteroceptive information. I propose a unified model of the bodily self that brings these two sides of embodiment together. Our findings suggest that people with lower interoceptive awareness display a more malleable sense of self that heavily depends on exteroceptive signals. We show that this has important implications for models of self-awareness, but also for self-objectification and body image satisfaction, as people with lower interoceptive awareness tend to objectify themselves more and report greater body image dissatisfaction. Therefore, it seems that interoceptive awareness is important for psychological aspects of health and wellbeing that relate to our body image, highlighting the role that embodiment plays in physical and mental health, and the potential to inform psychological interventions on related disorders.

**SYMPOSIA & ORAL SESSIONS
SESSIONS 1 - 7**

10u50 – 12u10

S1: Symposium

Arithmetical knowledge: New insights

Room: MOL 4.02

Organizer & Chair: Alice De Visscher¹

¹ *Université catholique de Louvain*

This symposium addresses the question of how humans acquire and use arithmetical knowledge, by means of longitudinal, brain imaging and lifespan studies. First, Kiran Vanbinst will report a longitudinal study on fourth grade children, highlighting the close relationship between numerical magnitude processing and arithmetical knowledge. Second, Virginie Crollen will bring original data on blind versus sighted participants, on how the visual experience shapes the neural circuitry of two different operations, namely multiplication and subtraction. Finally, the similarity interference of multiplication problems is investigated in the two last presentations. Kim Archambeau will present arithmetic performance in elderly versus young adults, who differ in sensitivity to interference in memory. Subsequently, Alice De Visscher will report the brain modulations related to the well-known problem size effect and the recent proactive interference effect in multiplications.

Symbolic numerical magnitude processing is as important to arithmetic as phonological awareness is to reading

Kiran Vanbinst¹, Daniel Ansari², Pol Ghesquière¹, & Bert De Smedt¹

¹ *Parenting and Special Education Research Unit, Faculty of Psychology and Educational Sciences, University of Leuven, Leuven, Belgium.*

² *Numerical Cognition Laboratory, Department of Psychology & Brain and Mind Institute, University of Western Ontario, London (ON), Canada.*

In this study, we tested, using a 1-year longitudinal design, whether symbolic numerical magnitude processing or children's numerical representation of Arabic digits, is as important to arithmetic as phonological awareness is to reading. Children completed measures of symbolic comparison, phonological awareness, arithmetic, reading at the start of third grade and the latter two were retested at the start of fourth grade. Cross-sectional and longitudinal correlations indicated that symbolic comparison was a powerful domain-specific predictor of arithmetic and that phonological awareness was a unique predictor of reading. Crucially, the strength of these independent associations was not significantly different. This indicates that symbolic numerical magnitude processing is as important to arithmetic development as phonological awareness is to reading and suggests that symbolic numerical magnitude processing is a good candidate for screening children at risk for developing mathematical difficulties.

How visual experience shapes the brain selectivity for specific mental calculation

V. Crollen^{1,2,3}, L. Lazzouni¹, M.P. Noël², X. Seron², F. Lepore¹, A. Bellemare¹, & O. Collignon³

¹ *Centre de Recherche en Neuropsychologie et Cognition (CERNEC), University of Montreal, Canada*

² *Institut de Neurosciences, Université catholique de Louvain, Belgium*

³ *Centre for Mind/Brain Science, University of Trento, Italy*

In the past twenty years, brain imaging data have suggested that distinct areas of the parietal cortex may be involved in different aspects of mental calculation. Since a strong link between visuo-spatial and numerical abilities has been respectively suggested, the present experiment aimed to examine whether visual experience was necessary for the development of the cortical circuits involved in numerical processing. The brain activity of congenitally blind and sighted participants was characterized using fMRI while participants solved simple subtraction and multiplication operations. Participants heard 3 numbers and had to decide whether the third number was the correct result of the subtraction or multiplication of the first 2 numbers. In a control condition, participants heard 3 letters and had to decide whether the third letter belong to the same category (vowel vs. consonant) as the first 2 letters. We first observed that mental calculation versus letter discrimination activated the classical 'numerical network' (including IPS regions) in both groups, suggesting that visual experience is not mandatory for its development. Replicating prior studies, we found that subtraction and multiplication rely on distinct brain networks in sighted: bilateral hIPS activations for subtraction and a left-lateralized network for multiplication comprising the left temporal sulcus. Importantly, no between-group difference was observed for the multiplication task whereas subtraction induced, in addition to the activation of the parietal cortex, a stronger occipital activation in blind individuals. These results therefore suggest that visual experience differently affects the neural circuitry involved in multiplication and subtraction.

Arithmetic fact and sensitivity to interference in ageing

Kim Archambeau¹, Alice De Visscher², Marie-Pascale Noël² & Wim Gevers¹

¹ *Université Libre de Bruxelles*

² *Université Catholique de Louvain*

Arithmetic facts are required when solving problems such as “7x8” and are frequently used in everyday life situations. They refer to calculations for which the correct answer is retrieved from memory and they are stored in interconnected associative networks (Ashcraft, 1992). Numerical problems, operands and answers are densely interconnected memory structures causing interference between these associations. This effect of interference in arithmetic facts has been reported in children as well as in young adults in recent studies (e.g. De Visscher & Noël, 2014b). Furthermore, It has repeatedly been observed that older adults have more difficulty resolving interference in memory than younger adults (e.g. Jonides et al., 2000). The goal of this study is to investigate whether and how arithmetic facts are affected by the increase of sensitivity to interference with ageing. To do so, we tested participants belonging to three different age groups (20-35, 55-65 and 65-75). They performed tasks designed to directly measure the sensitivity to interference in memory (e.g. recent-probes task). We also measured arithmetic abilities using tasks specifically designed to measure sensitivity to interference (e.g. multiplication verification task with operand-related lures). On the basis of the literature, we expect that participants become more sensitive to interference in memory with age (Jonides et al., 2000). If sensitivity to interference is involved in our arithmetic abilities, then performance in our specifically designed arithmetic tasks should be affected by ageing as well.

The interference effect in arithmetic fact solving: An fMRI study

Alice De Visscher^{1,2}, Sam C. Berens², James L. Keidel², Marie-Pascale Noël¹,
Chris M. Bird¹

¹ *Université catholique de Louvain*

² *University of Sussex*

Some multiplication facts share common digits with other, previously learned facts, and as a result, different problems are associated with different levels of interference. The detrimental effect of interference in arithmetic facts knowledge has been recently highlighted in behavioral studies, in children as well as in adults, both in typical and atypical development. The present study investigated the brain regions involved in the interference effect when solving multiplication problems. Twenty healthy adults carried out a multiplication task in an MRI scanner. The event-related design comprised problems whose interference level and problem size were manipulated in a 2×2 factorial design. After each trial, individuals were requested to indicate whether they solved the trial by retrieving the answer from long-term memory. The results highlighted two specific regions: the left angular gyrus was more activated for low interfering than for high interfering problems, supporting the idea of an automatic mapping in this region, and the right intraparietal sulcus was more activated for large problems than for small problems, supporting the idea of magnitude representation activation in this region. In both regions, brain activity was not modulated by the other effect. Importantly, neither effects can be reduced to a strategy effect since they were present when analyzing only retrieval trials.

S2: Oral session

Emotion & Attention

Chair: Gina Rossi (VUB)

Room: MOL 1.01

Is there a publication bias in behavioral intranasal oxytocin research on humans? Opening the file drawer of one lab

Anthony Lane¹, Olivier Luminet¹, Gideon Nave², & Moïra Mikolajczak¹

¹ UCL – Psychological Sciences Research Institute

² California Institute of Technology - Computation & Neural Systems, USA

The neurohormone oxytocin has been one the most studied peptides in behavioral sciences over the past two decades. Primarily known for its crucial role in labor and lactation, a rapidly growing literature suggests that intranasal OT may also play a role in humans' emotional and social lives. However, the lack of a convincing theoretical framework explaining oxytocin's effects has raised healthy skepticism regarding the robustness of human behavioral IN-OT research. The poor knowledge of OT's exact pharmacokinetic properties, crucial statistical and methodological issues and the absence of direct replication efforts may have led to a publication bias in IN-OT literature with many unpublished studies with null results lying in laboratories' drawers. Is there a file drawer problem in IN-OT research? If this is the case, it may also be the case in our laboratory. This presentation aims to answer that question, document the extent of the problem and discuss its implications for OT research. We reviewed and meta-analyzed eight studies testing the influence of IN-OT on human cognition and behavior, assessing 13 dependent variables through 25 different paradigms performed in our lab since 2009. The pooled effect size of our studies report a point estimated of 0. The null hypothesis cannot be rejected. All taken together our studies does produce a significant effect of oxytocin. This lab report suggests that a publication bias exists in the field and that the real effects of oxytocin may have be inflated in the literature.

Emotional competence buffers the effect of work load on hair cortisol

Pirsoul Thomas¹ & Mikolajczak Moïra¹

¹ *Université Catholique de Louvain*

Emotional Competence (EC; also called “emotional intelligence” EI) refers to individual differences in the identification, understanding, expression, regulation and use of one’s and others’ emotions. Previous studies have shown that EC moderates subjective responses (e.g., mood deterioration, emotional intensity, action tendencies, bodily sensations) to both natural and laboratory stressors. EC has also been found to be a significant moderator of the biological (i.e., cortisol) response to laboratory stressors. The present study aims to extend these results by investigating if the level of EC (1) predicts the chronic level of activation of the hypothalamo-pituitary-adrenal (HPA) axis and (2) moderates the effect of a chronic stressor such as workload on the HPA axis. Chronic activation was assessed through hair cortisol, which provides an indicator of the stress accumulated over the last three months. Results revealed that, as expected, higher EC is associated to lower HPA axis chronic activation (i.e., lower hair cortisol). These results hold when controlling for neuroticism and objectives stressors encountered during the last three months. Finally, and most importantly, EC strongly moderates the effect of workload on the chronic activation of HPA axis (i.e., hair cortisol). Therefore, we argue that EC deserves greater interest and attention from health professionals and companies

Personality and emotional reactivity in younger and older adults

Priska Steenhaut^{1,2}, Ineke Demeyer², Rudi De Raedt², & Gina Rossi¹

¹ *Vrije Universiteit Brussel, Brussels*

² *Universiteit Gent, Ghent*

Despite the losses older adults (OA) experience, they demonstrate more emotional wellbeing than younger adults (YA). According to socio-emotional selectivity theory, OA are better in regulating emotions. They also seem to react physiologically less strongly to emotional stimuli than YA. In YA a link between personality and emotional reactivity has been found. This study therefore investigates whether emotional reactivity and its link with personality differs between YA and OA. 120 YA (25-50 years) and OA (65+) were recruited. Personality was measured with the MMPI-2-RF-PSY-5-*r* and BFI scales. Physiological measures (HRV, SCL, EMG (corrugator, zygomatic)) were assessed while participants viewed a happy and sad film. Subjective reactivity (VAS) was registered after each film. OA had stronger subjective reactivity for happy and sad films than YA, but the only difference in physiological reactivity was that YA showed more arousal (SCL) during the happy film. OA's stronger subjective reactivity to sad films was related to higher scores on neuroticism and negative emotionality. In YA, negative emotionality went along with more frowning (corrugator) during sad films. Moreover, in YA, neuroticism was related to less arousal when seeing the happy (trend significant) and sad films, and higher HRV during the happy film. Differences in physiological reactivity to emotional stimuli between OA and YA are very limited, which implies that techniques like biofeedback don't need to be adapted to ageing. Relationships between personality and reactivity were less pronounced than expected, but, with the exception of neuroticism in YA, in the expected directions.

Attentional bias for high-calorie food: which moderators?

Georgia Zamariola¹, Karlijn Van Duin¹, Olivier Luminet¹, & Olivier Corneille¹

¹ Université Catholique de Louvain

The dramatic increasing rate of overweight and obesity in the Western countries has led to focus on the reasons why people tend to overeat and the ways to prevent this behaviour. Attention, and in particular attentional bias for food stimuli, is one central issue to take into account in obesity prevention. Food images are part of everyday life and having a bias for these stimuli can represent an eliciting factor for overindulging. The aim of the study was to investigate if an attentional bias for high-calorie food is present and if is moderated by one's eating behaviour trait, stress, alexithymia, gender and BMI. 76 participants (41 females) took part in the study. The eye-tracking technique was used to evaluate the first fixation and the length of fixation. Images of high- and low-calorie food and neutral stimuli were presented. Participants were instructed to look at them freely. The Dutch Eating Behaviour Questionnaire, the Perceived Stress Scale and the Toronto Alexithymia Scale were administered. We expect to find more attentional bias for high-calorie food in participants who score high in emotional eating behaviour, alexithymia and stress. Females will show less attentional bias than males. Regarding BMI, it can be predicted that people with higher BMI will show higher bias towards comfort food. This study could increase our knowledge on how food stimuli are perceived and which personality traits and characteristics might increase the attentional bias for unhealthy food. The findings could help us in understanding the vulnerability factors linked to overeating.

S3: Symposium

**Emotion and cognition in youth internalizing
problems**

Room: MOL 5.01

Organizer: Marie-Lotte Van Beveren¹

Chair: Caroline Braet¹

¹*Ghent University*

Recent prevalence and relapse rates indicate that internalizing disorders are severe and recurrent mental disorders among youth. Despite the high prevalence rates in younger age groups and the negative long-term consequences associated with these disorders, research directed at identifying the mechanisms underlying the development and maintenance of internalizing disorders in youth remains scarce. Therefore, the specific aim of the symposium is to present recent studies on the role of potential transdiagnostic emotional and cognitive processes in youth internalizing disorders.

Joint contribution of negative emotionality, positive emotionality, and effortful control on depressive symptoms in youth

Marie-Lotte Van Beveren¹, Caroline Braet¹, Laura Wante¹, Amy Mezulis²

¹ Ghent University

² Seattle Pacific University, Department of Clinical Psychology, USA

From a clinical developmental perspective, temperament has been shown to confer vulnerability to depression among youth. High negative emotionality (NE), low positive emotionality (PE), and low effortful control (EC) have repeatedly been independently associated with youth depressive symptoms. However, less research has examined the joint contribution of NE, PE, and EC on such symptoms. The present study builds upon previous research by examining how NE, PE, and EC jointly predict change in symptoms over time among 211 young adolescents (7-14 years, $M=10.7$, $SD=1.81$) who participated in an 8-month prospective study. Self-reported temperament and symptoms were assessed at baseline; self-reported symptoms were measured again at follow-up. Results suggested that all three temperamental traits need to be considered in predicting change in depressive symptoms. Consistent with the hypothesis that *low* EC would exacerbate the effects of *high* NE, we found that at *low* EC, a combination of *high* NE and *high* PE predicted more symptoms over time. Interestingly, however, at *high* EC, it was the combination of *high* NE and *low* PE that also predicted symptom increase. On the other hand, we found two temperamental profiles to predict lower symptoms at follow-up. The current study clarified how NE, PE, and EC may jointly confer risk- or protection for developing depressive symptoms during adolescence. The results highlight the need of taking into account temperamental profiles, in order to identify those at risk for developing symptoms at an early stage, as well as to provide customized care targeting this vulnerability in youngsters.

Reciprocal associations between cognitive styles, stressors and depressive symptoms in adolescents

Julen Alba¹ & Esther Calvete¹

¹University of Deusto, Department of Personality, Psychological Assessment and Treatment, Spain

Most of the previous research has focused on the role of stressors and cognitive styles as antecedents of depression. However, recent models of psychopathology suggest that the associations between these factors can be reciprocal. This study aims to analyze and the bidirectional relationships between depression, cognitive styles (rumination and maladaptive schemas) and stressors in adolescents. A sample of 625 adolescents (334 boys and 284 girls, aged 14-19 years) from several schools in Bizkaia (Spain) completed measures of these variables at four waves. Path analysis was used to examine reciprocal associations between variables. The results provide support for cognitive styles predicting depression and stressors, depression predicting cognitive styles, and stressors predicting depression and cognitive styles. These results are relevant to understand the development of depression in adolescents, a developmental period in which cases of depressive symptoms increase dramatically and in which gender differences appear.

Adaptive and maladaptive emotion regulation strategies mediate effect of executive functioning impairment on depressive symptoms among adolescents

Laura Wante¹, Caroline Braet¹, Marie-Lotte Van Beveren¹, Amy Mezulis²

¹*Ghent University, Ghent, Belgium.*

²*Seattle Pacific University, Department of Clinical Psychology, USA*

Past research results suggest that executive functioning (EF) impairment represents an important cognitive vulnerability factor to depression. Little research, however, has examined mechanisms underlying this association. The current study investigated the associations between EF impairments, emotion regulation (ER) strategies and depressive symptoms in a sample of 594 adolescents (330 females, $M_{age} = 12.06$). Parents reported on adolescents' executive functioning, and adolescents self-reported on emotion regulation strategies and depressive symptoms. Results indicated that greater EF impairment was associated with more depressive symptoms. Youth with greater EF impairment reported more maladaptive ER and less adaptive ER, and maladaptive and adaptive ER strategies jointly mediated the association between EF and depressive symptoms. The results highlight an important role of both maladaptive and adaptive ER in explaining the relationship between EF impairment and depressive symptoms and suggest that clinical interventions targeting ER skills may positively affect cognitive vulnerability to depression. Further longitudinal research is needed to confirm our results and to evaluate causality of the relations.

The efficacy of emotion regulation training in anxious youth

Nele A.J. De Witte¹, Caroline Braet², & Sven C. Mueller²

¹*Ghent University, Psychopathology & Affective Neuroscience lab, Ghent, Belgium*

²*Ghent University, Department of Developmental, Personality, and Social Psychology, Ghent, Belgium*

Anxiety disorders are the leading cause of mental illness in adolescence and increase the risk for adult anxiety and depression. Despite evidence of differences in (passive) emotion processing between clinically anxious and healthy adolescents, there are few similar comparative studies assessing the use and effectiveness of emotion regulation strategies within these populations. Offering anxious adolescents a training in adaptive emotion regulation skills could not only improve their anxiety but also prevent mental illness in adulthood. We developed an emotion regulation task inspired by multiple existing and already validated treatment protocols for children and adolescents. Twenty-seven children and adolescents with an anxiety disorder and 43 healthy children and adolescents ages 8 to 17 years old participated in the emotion regulation training and executed an emotion regulation computer task. Emotion regulation use and self-efficacy was measured before and after the intervention and the task. Despite emotion regulation self-efficacy being consistently lower in the anxious group, there was a similar improvement in emotion regulation ability and self-efficacy in both groups. Furthermore, there was a significant decrease in state anxiety from before the intervention to after the emotion regulation task. Interestingly, this decrease was larger in the anxious group as compared to the healthy controls. The results indicate that the current emotion regulation training is efficacious in teaching emotion regulation. Furthermore, the reduction in anxiety from baseline to after the emotion regulation task suggests that increasing emotion regulation skills has a positive impact on clinically relevant outcomes.

S4: Symposium

Personality and non-suicidal self-injury in community and patient samples

Room: Conferentiezaal

Organizers: Amarendra Gandhi¹, Glenn Kiekens², Els Pauwels^{1,3}, & Ellen Sleuwaegen⁴

Chair: Laurence Claes^{1,5}

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Non-suicidal self-injury refers to the direct injury of one's own body tissue without suicidal intent, for reasons not socially sanctioned. Examples of NSSI are scratching, cutting, burning, and hitting oneself. NSSI is a major health concern in both community and patient adolescent/adult samples. In the present symposium, we investigate the association between personality and NSSI in community and clinical samples, as well as underlying mediating/moderating variables like coping, identity development, etc. Clinical implications for prevention and treatment of NSSI will be discussed.

Personality traits and non-suicidal self-injury in adolescents: an examination of coping strategies and perceived stress as mediators

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⁵ *Faculty of Medicine and Health Sciences, University of Antwerp, Belgium*

Although research consistently showed associations between personality and Non-Suicidal Self-Injury (NSSI), it is unclear why this relation may exist. Drawing on a transactional approach, the present study examined whether perceived stress and coping are potential mediators in the relationship between Big Five personality traits and NSSI engagement in adolescents. In total, 946 Flemish (46%) and Dutch (54%) non-institutionalized adolescents (44% females; $M_{\text{age}} = 15.52$, $SD = 1.34$) were included. Measures were the NSSI subscale of the Self-Harm-Inventory, the Dutch Quick Big Five Personality questionnaire, the Perceived Stress Scale, and the Utrecht Coping List for Adolescents. Examination of zero-order correlations was used to reveal associations, and hierarchical regression analysis was used to reveal potential mediators which were further examined within parallel mediation models by using a bootstrapping-corrected procedure. Approximately one in four adolescents (24.31%) reported a lifetime prevalence of NSSI. Neuroticism; perceived stress; and distractive, avoidant, depressive, and emotional coping were positively associated with NSSI, whereas Agreeableness, Conscientiousness; and active, social, and optimistic coping were negatively associated with NSSI. Observed associations between Neuroticism, Agreeableness, Conscientiousness and NSSI were consistently explained by perceived stress and depressive coping. Our study suggests that adolescents with a specific personality constellation (high Neuroticism, low on Agreeableness and Conscientiousness) are potentially at higher risk to engage in NSSI via high stress levels and a typical depressive reaction pattern of handling stressful life events.

Cognitive personality traits and non-suicidal self-injury: the intervening role of identity confusion

A. Gandhi¹, K. Luyckx¹, L. Goossens¹, S. Maitra², & L. Claes^{1,3}

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Cognitive personality traits (sociotropy and autonomy) have been shown to be associated with Non-Suicidal Self-Injury (NSSI) and can also influence the process of identity formation (i.e., identity synthesis/confusion). Existing evidence suggests that disturbances in identity formation may be related to increased vulnerability to NSSI. Although these variables seem interrelated, a single model combining them has not been researched so far. In the present study, we investigated if the association between NSSI and sociotropy/autonomy was mediated by identity synthesis/confusion. Data were collected from 401 high school students using Personal Style Inventory II, Erikson Psychosocial Stage Inventory, and Self Injurious Questionnaire-Treatment Related. Spearman's rank correlation was used to explore the correlations between the study variables. Mediation analyses were performed using bootstrap analyses. Approximately 16.5% of students reported to have ever engaged in at least one episode of NSSI. Our findings suggested that the automatic function (self-reinforced) of NSSI (e.g., decrease of negative affect) was positively associated with the personality trait autonomy. This function of NSSI was also found to be negatively associated with identity synthesis and positively associated with identity confusion. Finally, the association between sociotropy/autonomy and NSSI was found to be fully mediated by identity confusion. Our findings suggest that higher levels of sociotropy and autonomy may lead to increased disturbances in identity formation (i.e., identity confusion), which in turn may lead to increased engagement in NSSI. These findings may have some significant clinical implications.

Personality typologies in borderline patients and its associations with non-suicidal self-injury

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The occurrence of Non-Suicidal Self-Injury (NSSI) is listed as one of the diagnostic criteria of the Borderline Personality Disorder (BPD) according to the DSM-5. Research has shown that 50-80% of all BPD patients engage in at least one type of NSSI during their life-time. The current study aims to investigate the prevalence of recent and life-time NSSI in different personality subtypes of BPD patients. A total of 150 inpatients with Borderline Personality Disorder (BPD) were recruited in two Belgian Psychiatric Hospitals. Participants were assessed by means of the Behavioral Inhibition and Behavioral Activation Scales (BISBAS Scales), the Effortful Control Scale (ECS) of the Adult Temperament Questionnaire, the Barratt Impulsiveness Scale, the Utrecht Coping List and the Self-Injury Questionnaire-Treatment Related. BPD personality subtypes were determined by means of cluster analysis on the BISBAS scales and the ECS; and validated by comparing the different personality subtypes on the level of NSSI, impulsivity, and coping by means of MANOVAs. We were able to define four BPD personality subtypes based on the BISBAS Scales and the ECS: a antisocial subtype, an inhibited subtype, a resilient subtype and an emotional/disinhibited subtype. Overall, 84.2% of the BPD patients engaged in at least one type of NSSI during their life-time. BPD patients belonging to the emotional/disinhibited cluster reported the highest level of life-time NSSI (87.9%); whereas the resilient BPD subtype showed the lowest level of life-time NSSI (80%). Additionally, we will discuss differences between BPD subtypes with respect to recent NSSI, applied methods of NSSI, and functions of NSSI; as well as differences in impulsivity and coping. The current findings offer insight into meaningful differences in NSSI among different BPD subtypes and bears important clinical implications.

Early maladaptive schemas in eating disordered patients with or without non-suicidal self-injury

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The co-occurrence of non-suicidal self-injury (NSSI) and eating disorders (ED) is often explained by their common association with childhood trauma, severity of psychopathology and low self-esteem which, in turn, are often related to more personality pathology or higher levels of Early Maladaptive Schemas (EMS). This study investigates early maladaptive schemas (EMS) in function of ED subtype (restrictive/bulimic) and the presence/absence of NSSI. Female inpatients ($N=491$) completed the Young Schema Questionnaire and the Self-Injury Questionnaire-Treatment-Related. The influence of ED subtype and the presence/absence of NSSI and their interaction on the EMSs was investigated by means of a MANCOVA. The results showed main effects of ED subtype and the presence of NSSI on EMS after controlling for ED severity. Bulimic patients scored significantly higher on Insufficient Self-Control and Emotional Deprivation compared to restrictive patients; whereas restrictive patients scored significantly higher on Social Undesirability, Failure to Achieve, Subjugation and Unrelenting Standards compared to bulimic patients. ED patients with NSSI reported significantly higher EMS levels compared to patients without NSSI, indicating more psychopathology. Based on these findings, Cluster B related EMSs seem more strongly related to bulimic ED symptoms; whereas Cluster C related EMSs seem more strongly related to restrictive ED symptoms. Furthermore ED patients with NSSI reported higher levels of EMSs, suggesting that they could benefit more from schema therapy.

S5: Symposium

Being threatened or being a part: The effect of threat on belonging in (social) groups

Room: MOL 3.01

Organizer: Judit Kende¹

Chair: Colette van Laar¹

¹ *University of Leuven*

This symposium brings together researchers studying the effect of threat on belonging in interpersonal and intergroup relationships using experiments and surveys. Kende and colleagues investigated whether for minority students belonging to both the majority and minority group is threatened by unequal treatment in school and by majority contact under these circumstances. Veldman and colleagues examined how university students who perceive their social background is incompatible with a university education, feel that they belong less and may achieve less at university. Van Grootel and colleagues investigated ways in which men who experience experimentally induced threat to their masculinity can cope with this threat by restoring their belonging to a more broadly defined masculinity that includes communal traits. Fischer and colleagues report how participants in cyberball games restored belonging and status goals by aggressive or prosocial behavior depending on the behavior's utility. All papers discuss ways to lift threat and restore belonging.

Majority group belonging without minority group distancing? Minority perspectives on intergroup contact and equality

Judit Kende¹, Gülseli Baysu², Karen Phalet¹ & Colette van Laar¹

¹ *University of Leuven*

² *Kadir Has University*

In real-life encounters with majority members, minorities experience both positive contact (such as friendship) and unequal treatment (such as discrimination). Equal treatment and positive contact with majority members signal to minorities that they can belong to both the majority and minority group, whereas unequal treatment signals that claims to dual group membership are threatened. Taking a minority perspective on ethnically diverse schools, we (a) play out intergroup friendship against equal treatment as predictors of belonging to the majority and minority groups (b) examine the interplay of friendship with equality on minorities' belonging to the majority and minority groups. We hypothesized that having more majority friends without equal treatment might come at the price of distancing from the minority group. Drawing on a random sample of over 1200 (mainly Turkish and Moroccan origin) minority students in 65 secondary schools in Flanders, we ran multi-level models to test the impact of (individual-level and self-reported) intergroup friendship, unequal treatment in schools and their interaction. We tested associations with minorities' attitudes towards and identification with majority as measurements of belonging to the majority and their ethnic pride and identification as indicators of minority group distancing. We found that both intergroup friendship and perceived equal treatment enhanced belonging to the majority. However, contact in schools perceived as less equal enhanced majority belonging at a cost: students who spent more time with majority friends had lower ethnic pride and identification. This was not the case in schools perceived as equal.

Adjustment and belonging among first-generation university students

Jenny Veldman¹, Loes Meeussen¹, & Colette van Laar¹

¹ *University of Leuven*

During the transition from secondary education to university many students encounter difficulties. High drop-out rates among first-generation students (i.e., being the first in the family to go to college) suggest that this life transition is especially difficult for this group. In this project we took a contextual and social identity perspective to increase insight in these students' experiences during their first semester at university. In three methodologically different studies we investigated the effects of perceiving your social background to be incompatible with being a university student. An experiment among first-generation students starting their university education ($N = 56$) made this identity salient, by having them read a short article supposedly published in the university newspaper on how the transition to university is especially challenging for first-generation students (vs. a neutral article about the university). Additionally, we conducted a longitudinal study among first-year psychology students ($N = 220$), and a cross-sectional survey among first-year students ($N = 579$) from various departments. Results showed that experiencing incompatibility between social background and going to university was related to being more concerned about belonging at university and achieving at university. However, perceptions of contextual support from the university and their social environment reduced these concerns among this sample of university students. These concerns were related to self-efficacy, an important motivational predictor for their university education.

Limits of stereotypes on male engagement in communal career and domestic roles: Does broadening the definition of masculinity increase interest, motivation and intent?

Sanne Van Grootel¹, Loes Meeussen¹, Colette van Laar¹, & Jenny Veldman¹

¹ *University of Leuven*

Much of the research on stereotyping focuses on effects of stereotypes on women. Men too, however are restricted by stereotypes. In particular, research on precarious manhood has shown that masculinity tends to be viewed as a precarious state that needs constant validation, and that threatening masculinity can thus have strong effects on behavior, interests and motivations (e.g. Vandello et al., 2008). Men's underrepresentation in communal HEED roles (Health care, Elementary Education and Domestic roles) is one outcome of this process. Expanding previous research, the current work examined whether threatening vs. reaffirming masculinity influenced intentions, interest and motivation in communal roles. Participants ($N=120$) underwent a commonly used masculinity threat task that required them to list ten things they did in the past month that fits to the cultural ideal of a 'real man' (Weaver, Vandello, & Bosson, 2013). Masculinity threat was then lifted by a masculinity reaffirmation manipulation in which the definition of masculinity was broadened by incorporating more communal traits in the description of the 'new man'. Results offer insight into the role of stereotypes and affirmations as limiting and broadening access to gender-typical roles and tasks, limiting threat and extending belonging.

Emotional behavior caused by frustrated status and belonging goals

Maja Fischer¹, Agnes Moors¹, Batja Mesquita¹, & Peter Kuppens¹

¹ *University of Leuven*

Research has shown that the frustration of important personal goals can cause emotional behavior (e.g., aggression). In contrast to some current emotion theories, which propose that emotional behavior is driven by appraised stimulus features (e.g., goal incongruence, controllability), we tested an alternative explanation. This explanation suggests that emotional behavior is better explained by the utility of the behavior in a given situation. Utility is a function of the value of an outcome (e.g., satisfaction of a goal) and the expectancy that the behavior will lead to this outcome. Hence, we hypothesize that the goal to restore status/belonging only elicits aggressive/prosocial behavior if the outcome expectancies for these behaviors is high. We tested this explanation in an experiment using a variant of the cyberball game. The value of status/belonging goals were manipulated by frustrating them. Participants ($N=121$) were given the opportunity to act either aggressively or prosocially. The expectancies of these behaviors were manipulated via instructions stating that aggressive behavior would have a high expectancy of restoring status whereas prosocial behavior would have a high expectancy of restoring belonging. As an outcome, we measured the action tendencies to behave aggressively vs. prosocially with an implicit measure (i.e., Implicit Relational Assessment Procedure), and we recorded overt behavior. We found that overt behavior depends on the perceived utility, whereas action tendencies seem to be more influenced by the strength of the goal frustration. These results suggest that a goal-directed explanation of emotional behavior can provide an alternative to common stimulus-driven explanations.

S6: Invited Symposium

Cognitive processes underlying pain

Room: MOL 4.01

Organizer & Chair: Geert Crombez¹

¹ *Ghent University*

The experience of pain is the result of a complex dynamic system that codes, transports and processes nociceptive signals. The relationship between nociceptive information and pain is profoundly affected by cognitive and affective. A key role is played by attention, a mechanism by which sensory events are selected and enter awareness. Research reveals that pain, as a biological hard-wired signal of bodily threat, demands attention and interferes with cognitive functioning. Each of the presentations review and discuss the role of attention and/or its consequences for subsequent action using an experimental approach. Notwithstanding, potential implications and innovations of these findings for practice are formulated.

Does sustained pain induce “crossmodal central sensitization”?

D.M. Torta¹, E.N. Van den Broeke¹, V. Legrain¹, & A. Mouraux¹

¹ *Institute of Neuroscience (IoNS), Université catholique de Louvain, Brussels*

Studies on multisensory integration and crossmodal interactions have shown that information coming from other sensory modalities can shape. Much less is known about how pain may shape the processing of other sensory stimuli. Here, I will present the results of studies in which we used a novel approach to study crossmodal interactions. We used an experimental model of central sensitization, high frequency stimulation of the skin, and characterized the sustained after-effects of intense nociceptor activation on the processing of non-somatosensory (i.e. visual) stimuli. Unlike other methods to induce central sensitization, HFS does not elicit any spontaneous on-going long-lasting sensation of discomfort or burning pain. This ensures that observed effects are not due merely to a crossmodal effect of on-going pain perception but rather that they are truly related to sustained changes induced by the preceding activation of nociceptors. The results of these studies indicate that intense and sustained nociceptor activation induces an enhancement of brain responses belonging to several sensory modalities, including visual stimuli. The effects of central sensitization on the anticipation of sensory stimuli will also be discussed, together with the implication of these results for the study of chronic pain.

Can you feel it? New challenges and advances in the study of pain-related hypervigilance

Stefaan Van Damme¹

¹ *Department of Experimental-Clinical and Health Psychology, Ghent University*

Attention is a central factor in several pain theories aiming to explain amplified pain perception, disability, and distress. Particularly influential is the idea that patients with chronic pain are often characterized by hypervigilance, that is, heightened attention to pain-related information. A recent meta-analysis of the available evidence failed to find convincing support for this idea. However, research in this area is hindered in two ways. First, although both theory and clinical observation seem to start from the idea of excessive attention to somatosensory cues, the majority of studies have employed paradigms assessing attention to visual stimuli (for example words describing pain sensations) rather than bodily sensations. Second, hypervigilance is most often assessed as a stable factor in neutral laboratory situations, which may not capture the dynamic nature of attention and its function to avoid potential harm in relevant daily life situations, for example the execution of movements. In this presentation, the need for theoretical and conceptual refinement will be argued. Furthermore, new advances in the assessment of hypervigilance will be presented and illustrated with recent experimental studies. Potential utility of these methods for research in clinical pain contexts will be discussed.

The effectiveness of attentional strategies when experiencing chronic pain: Current knowledge, novel findings and future directions

Dimitri Van Ryckeghem¹

¹*Department of Experimental-Clinical and Health Psychology, Ghent University*

Pain is an aversive sensation and largely interferes with daily life activities of chronic pain (CP) patients. A broad range of attentional strategies are available to help manage or reduce pain and distress. In particular attentional strategies, such as distraction and sensory monitoring, are often proposed to cope with CP. Yet, most research investigating the effectiveness of these strategies has been conducted in healthy people experiencing acute, experimental or procedural pain. Furthermore, the scarce research on the effectiveness of these strategies in CP patients is equivocal. Reasons for these equivocal findings may relate to e.g. differences in type of pain, specific operationalization of the attentional strategy, methodological problems. In this presentation, I will (1) critically review available evidence on the effectiveness of distraction and sensory monitoring to cope with pain and distress for CP patients and (2) present novel research findings on distraction effectiveness using a controlled experimental design in a sample of fibromyalgia patients ($N=49$) and matched comparison group ($N=49$). In general, results of the experimental study show that distraction reduces pain experienced in CP patients, in a similar way as in healthy participants. These results, however, contrast findings of the review which demonstrate no overall advantage of distraction or sensory monitoring compared with a control condition. Yet, study findings included in the review are characterized by small sample size and substantial heterogeneity. As such, current findings call for more research on the effectiveness of attentional strategies in large samples of CP patients using well-controlled study designs.

Taking a break because of pain. How do activity interruptions by pain affect activity performance?

Rena Gatzounis^{1,2}

¹ *Health Psychology, KU Leuven (University of Leuven), Belgium*

² *Department of Clinical Psychological Science, Maastricht University, Maastricht, The Netherlands*

Pain captures our attention and urges us to interrupt ongoing activities, i.e. to suspend ongoing tasks for some time with the intention to resume them again later. This is also the case for people with (chronic) pain problems. Until recently, the consequences of such activity interruptions by pain for the resumption and continuation of the activity were understudied. Based on previous research from inside and outside the field of pain, we predicted that activity interruptions by pain will impair the resumption and performance of the activity, and that this impairment would be larger than the impairment caused by interruptions by non-painful stimuli. We investigated these predictions in a series of experimental pain studies with healthy volunteers. Our participants performed an ongoing task that was occasionally interrupted by painful electrocutaneous stimuli or by non-painful vibrotactile stimuli. The painful or non-painful stimuli were followed by a (second) interrupting task. After engaging in the interrupting task for some time, participants were required to resume the ongoing task at the point where that had previously been interrupted. Our focus lay on indices of task performance. Analyses showed that interruptions by pain do indeed have negative consequences, as participants performed worse in the trials immediately after an interruption as compared to other trials. This impairment, however, was not greater than that caused by interruptions by non-painful stimuli. Findings will be discussed in the context of previous research from within and outside the field of pain.

S7: Oral session

Cognition

Chair: Martin Edwards (UCL)

Room: SAN 1.3

Paying attention to working memory: Similarities in the spatial distribution of attention in mental and physical space

Sahan Muhammet Ikkal¹, Verguts Tom¹, Boehler Carsten Nicolas¹, & Fias Wim¹

¹Ghent University, Ghent, Belgium

Selective attention is not limited to information that is physically present in the external world, but can also operate on mental representations in the internal world. However, it is not known whether the mechanisms of attentional selection operate in similar fashions in physical and mental space. We studied the spatial distributions of attention for items in physical and mental space by comparing how successfully distractors were rejected at varying distances from the attended location. The results indicated very similar distribution characteristics of spatial attention in physical and mental space. Specifically, we found that performance monotonically improved with increasing distractor distance relative to the attended location, suggesting that distractor confusability is particularly pronounced for nearby distractors, relative to distractors farther away. The present findings suggest that mental representations preserve their spatial configuration in working memory, and that similar mechanistic principles underlie selective attention in physical and in mental space.

Unveiling spatial awareness deficits after left hemisphere stroke

Mario Bonato¹, Lien Naert¹, Elvio Blini³, Zaira Romeo³, Marijke Miatton², Dimitri Hemelsoet², Anneleen Leyman², Paul Boon², Wim Fias¹, Chiara Spironelli³, Marco Pitteri³, Francesca Meneghello⁴, & Marco Zorzi^{3,4}

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² *Ghent University Hospital*

³ *Department of General Psychology, University of Padua, Padua, Italy*

⁴ *IRCCS San Camillo, Lido Venice, Italy*

While the role of the right hemisphere in contralateral spatial awareness is well established, the attentional functions of the left hemisphere are seldom investigated. Here we tested whether multitasking would reveal contralesional spatial disorders in left-hemisphere damaged (LHD) stroke patients, a clinical population in which impaired spatial processing is thought to be uncommon. Twenty LHD patients (10 acute and 10 chronic) with little or no signs of right-sided neglect/extinction at standard neuropsychological testing performed a computerized spatial monitoring task with and without concurrent secondary tasks (i.e., multitasking). Severe contralesional (right) space unawareness emerged in several patients under attentional load in both the visual and auditory modalities. Multitasking affected the detection of contralesional stimuli both when presented concurrently with an ipsilesional one (i.e., extinction for bilateral targets) and when presented in isolation (i.e., neglect for right-sided targets). No spatial bias emerged in a first control group of healthy elderly participants, who performed at ceiling, as well as in a second control group of Mild Cognitive Impairment patients. In LHD patients attention-demanding computer-based tasks allow a more sensitive assessment of spatial deficits than classic paper-and-pencil tests already from the acute phase. Under dual-tasking the severity of contralesional extinction (in the acute phase) and even of contralesional single target detection (in the chronic phase) confirms that patients' performance dramatically deteriorates when more relevant features have to be processed.

Alpha power in visual brain areas reveals attentional modulations during stimulus and response incongruent trials

Clio Janssens¹, Esther De Loof¹, Nico Böhler¹, Gilles Pourtois², & Tom Verguts¹

¹ *Department of Experimental Psychology, Ghent University, Belgium*

² *Department of Experimental Clinical & Health Psychology, UGhent*

Cognitive control is essential for performing goal-oriented actions. Its neural basis includes at least two main components. A mid-frontal area signals the need for control; other cortical areas subsequently implement control by biasing sensory areas, boosting or suppressing activity in areas processing task-relevant or task-irrelevant information, respectively. Classical cognitive control theories state that control is a serial and thus slow process, while more recent associative models hypothesize that control can be implemented much more rapidly (Janssens et al. 2016; Verguts & Notebaert 2008). EEG allows studying such rapid control. To obtain spatial specificity, earlier EEG research (Appelbaum et al. 2011) used a flanker task with incongruent flankers in only one hemifield (congruent flankers in the other hemifield). ERPs revealed modulations specifically in visual areas processing incongruent stimuli. However, this study did not distinguish between stimulus incongruency (SI, visual dissimilarity) and response incongruency (RI). Moreover, interpretation of the ERP modulation is difficult since it can imply both increased and decreased neural activity. In the current study, we applied a similar paradigm but included both a SI and RI condition. We show the ERP modulations observed by Appelbaum et al. (2011) in both SI and RI conditions. Importantly, we show that alpha power suppression after stimulus presentation, which is linked to increased metabolic activity (Laufs et al. 2003) and attention (Worden et al. 2000), is more pronounced in areas processing incongruent (SI or RI) flankers than in areas processing congruent flankers. This indicates fast, within-trial attentional suppression for distracting information.

Modification of parahippocampal theta activity during a spatial memory task: a sensitive marker of cognitive weaknesses?

Ségolène Lithfous¹, Cloé Bouix², André Dufour^{2,3}, Adeline Commauche², Thierry Pebayle^{2,3}, Romain Goutagny², Delphine Tromp² & Olivier Després²

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² *Laboratory of Cognitive Neuroscience and Adaptation (UMR 7364, Unistra/CNRS), University of Strasbourg, France*

³ *Center of Neurocognitive et Neurophysiological Investigations (UMS 3489, Unistra/CNRS), University of Strasbourg, France*

Cognitive aging varies widely among individuals. Whereas optimal cognitive agers show highly preserved cognitive functions throughout life, other subjects experience cognitive declines. As spatial navigation is one of the most frequently impaired functions in aging, this study evaluated the sensitivity of a navigation task to detect cognitive weaknesses and related functional cerebral modifications during non-pathological aging. Two groups of elderly subjects were selected, high- (HP) and low-performing (LP), based on their performance on a detailed neuropsychological examination. One group of young adults constituted the control group. Cerebral activity was recorded by electroencephalography (EEG) while subjects performed a navigation task, in which they had to retrieve their way in virtual mazes after viewing a map of each maze. There were three trail for each maze. We analyzed theta power during navigation within the mazes. The LP group was less accurate than the HP group during the navigation task, although both groups of elderly performed below the young group. More interestingly, the navigation task was more sensitive than neuropsychological measures in distinguishing between the LP and HP groups. Theta activity in the left parahippocampal gyrus increased in the third compared to the first trial in young and HP, but not in LP, subjects. These results suggest that navigational abilities and functional cerebral modifications may be more sensitive detectors of cognitive weakness in elderly individuals than conventional neuropsychological measures.

Notes Sessions 1 - 7

Notes Sessions 1 - 7

Notes Sessions 1 - 7

**SYMPOSIA & ORAL SESSIONS
SESSIONS 8 - 14**

13u30 – 14u50

S8: Symposium

Recent advances in attitude formation and decision making

Room: MOL 4.02

A. Mierop¹ & A. Bret²

Chair: Adrien Mierop¹

¹*Université catholique de Louvain*

²*Université de Grenoble Alpes*

Two qualitatively different routes for attitude formation and decision-making have been described in the literature: an automatic or associative route and a conscious and cognitively elaborated route. The psychological processes at play in these two paths have been traditionally distinguished and even considered mutually exclusive. However, recent years have seen a rise in relevant theorizing and empirical research on how we develop attitudes or make decisions that bring complexity to the conceptualization and interplay between these two routes. This symposium brings together researchers that adopt social psychology, cognitive psychology and neuropsychology perspectives to examine more deeply attitude formation and decision making processes.

Saving the Perruchet effect: A role for the strength of the association in associative learning

A. Destrebecqz¹, M. Vande Velde¹, E. San Anton¹, A. Cleeremans¹, & J. Bertels¹

¹*CRCN, Université libre de Bruxelles*

According to associationist, "strength" theories, learning occurs by automatic reinforcement between co-occurring events in the environment. According to opposite cognitive, or propositional accounts, learning depends on conscious hypothesis testing in such a way that performance to an event will improve when participants' conscious expectancies for that event increase. Perruchet et al. (2006) and Destrebecqz et al. (2010) used a simple reaction time task in which a warning tone (E1) was followed by a visual target (E2) in 50% of the trials. RT to the visual targets were recorded as well as participants' expectancies before each trial. Results indicated that while expectancy ratings decreased with the number of preceding tone-target trials (a phenomenon known as the gambler's fallacy), RTs became faster with runs of tone-target trials and slower with runs of target-alone ones —providing evidence for associationist accounts of unaware learning. This associationist interpretation of the Perruchet has been put into question and it has later been argued that simple motor priming could account for the data (Mitchell et al., 2010). In this study, we compared RT and expectancies in an experimental condition in which E1 predicted E2 with a control condition in which both events were uncorrelated. We found that RT decreased with the length of the preceding runs in both condition but the decreasing slope was steeper in the experimental condition, indicating the additional influence of the associative strength on performance. Interestingly, the slope was also steeper for participants who did not show the gambler's fallacy, suggesting that performance is also influenced by conscious expectancy.

Resources availability and explicit memory largely determine evaluative conditioning... even in a paradigm conducive of implicit EC effects.

A. Mierop¹, M. Hütter², & O Corneille¹

¹ *Université catholique de Louvain*

² *Universität Tübingen*

Dual-process models of evaluative learning argue that evaluative conditioning (EC) effects may emerge implicitly. In contrast to this view, recent studies obtained no EC effect when an attentional load was imposed upon participants at learning, preventing them from encoding CS-US pairings in explicit memory. One may argue, however, that an implicit, resource-independent, EC effect may be observed under load conditions when more suitable CS-US pairing procedures and analytic measures are considered. In three experiments, we examined the latter possibility (1) using a CS-US pairing procedure that has been shown to be conducive of implicit EC effects and (2) using a more fine-grained analytic treatment of explicit and implicit memory in a multinomial processing tree model. In all three experiments, the EC effect was found to be sensitive to the availability of cognitive resources and this effect was accompanied by significant reductions in an explicit memory parameter under attentional load. Furthermore, no evidence obtained for an implicit memory contribution to the EC effect. In conclusion, the present research yielded evidence for explicit learning, but no support for implicit learning mechanisms in EC, even though the current experiments examined EC effects in a learning procedure that is thought to facilitate implicit evaluative learning.

Socio-political ideologies predict (un)learning evaluatively conditioned attitudes

A. Bret¹, A. Mierop², Beffara, B.¹, O. Corneille², & M. Mermillod¹.

¹ *Université de Grenoble Alpes*

² *Université catholique de Louvain*

Socio-political ideologies predict prejudice against out-group members. Social Dominance Orientation (SDO) and Right-Wing Authoritarianism (RWA) are risk factors for ethnocentrism, nationalism, and prejudice. However, the role of socio-political ideologies in the acquisition and unlearning of social attitudes has not been studied yet. In order to examine the latter question, we used an evaluative conditioning paradigm simulating a prejudice formation process. 55 participants took part in the experiment. They first completed a Wisconsin Card Sorting Test to measure their cognitive flexibility. Then, two families of “Greebles” (neutral fictive characters) were successively positively and negatively conditioned or vice versa. We measured the net influence of the first (learning) vs. second (unlearning) conditioning in attitudes formation. Participants then answered the RWA and SDO questionnaires. As predicted, high-RWA participants relied more upon the first conditioning as compared to low RWA participants (i.e., they were either more likely to learn or less likely to unlearn). Against all expectations, we observed the reverse effect for high-SDO participants, who were more influenced by the second (i.e., unlearning) conditioning phase. These effects were unrelated to cognitive flexibility. We discuss these results in light of the Dual Process Motivational Model (Duckitt et Sibley, 2010).

A distinct oscillatory mechanism for metacognition during perceptual decision-making

Martijn E. Wokke^{1,2}, Axel Cleeremans¹, & K. Richard Ridderinkhof²

¹ *Université Libre de Bruxelles*

² *University of Amsterdam*

Decision-making is one of the most fundamental parts of our daily life. Undoubtedly, when having to select a course of action reflective monitoring and control of our decision process (metacognition) is of crucial importance. For instance, when a doctor has to make a medical decision, information from different sources are being accrued and combined to form a diagnosis (e.g., information from MRI images and from the anamnesis), but when a doctor is uncertain about the quality of the decision additional tests can be considered. Despite the importance of metacognition for effective decision-making, it remains unclear how metacognitive knowledge emerges. Here I will address how metacognition develops during decision-making and how it relates to first order performance (task accuracy). We recorded EEG signals while participants were asked to make a diagnosis after seeing a sample (a complex visual pattern) of fictive patient data. This sample could either belong to a sick or to a healthy patient. Participants gradually learned to distinguish sick from healthy patterns, while indicating on each occasion how they made their decision (i.e., guessing, intuitive or rational choice and indicating their level of confidence). Single-trial analyses demonstrate that first and second order decisions rely on different sources of information. Further, we observed that task accuracy is related to beta band activity, whereas metacognition is specifically associated with late emerging (anterior) frontal theta band activity. These findings indicate that first order task performance and metacognition operate via distinguishable oscillatory mechanisms.

S9: Invited Symposium

Visual Consciousness

ROOM: MOL 1.01

Organizer & Chair: Filip Van Opstal¹

¹ *Center For Research in Cognition & Neurosciences*
Université Libre de Bruxelles (ULB)
ULB Neuroscience Institute

Consciousness has intrigued many scholars for many centuries but remains a highly studied and debated matter. While consciousness comes in many forms, psychological and neuroscience research is mainly concerned with access consciousness, i.e. the phenomenon whereby (visual) information becomes available for report and can be used for behaviour. Decades of research on consciousness have led to a wealth of experimental data but a consensus about its nature or (neural) origin is still largely absent. This is partly due to the difficulty of finding suitable experimental paradigms to investigate access consciousness. Potential issues arise, for example, when low-level visual features are not well controlled for, or when the relation between consciousness and other high-level cognitive processes is unclear or not well understood. These and other issues will be addressed in this symposium.

Using EEG to track visual consciousness and predictive mechanisms in the infant brain

Sofie Gelskov¹ & Sid Kouider¹

¹*Ecole Normale Supérieure, France*

Infants demonstrate a sophisticated behavioral and cognitive repertoire that suggests that they are conscious of their environment. Yet, since infants can hardly report their thoughts it remains difficult to investigate such mechanisms. In this talk I will present a series of studies where we used EEG to address the issues of whether and how 1) infants experience perceptual consciousness and 2) rely on predictive coding mechanisms to make perceptual inferences. In these studies we first established the thresholds of visibility in 5-15 month old infants by presenting brief masked faces in a preferential looking paradigm. Then we used EEG to demonstrate that the neural mechanisms underlying the threshold of conscious perception in adults are already present in 5-15 month old infants. However, these mechanisms are much slower in infants and accelerate during development. Finally, I will talk about whether and how prior expectations shape neural responses in sensory regions of the infant brain. To study this, we used a cross-modal cueing paradigm while recording EEG responses to expected and unexpected events in 12-month old infants. We found that unexpected events led to an amplification of the same component that was found for conscious percepts in the previous study. In contrast, predicted events led to early amplification of neural responses, suggesting that selective attention enhances perceptual processing for expected events. These results demonstrate that cross-modal statistical regularities are used to generate predictions that differentially influence early and late neural responses in infants. Furthermore, they reveal a privileged link between prediction error and consciousness in infants.

On high-level unconscious processing in a continuous flash suppression paradigm

Pieter Moors¹, Johan Wagemans¹, & Lee de-Wit¹

¹ *KULeuven, Belgium*

Over the last decade, continuous flash suppression (CFS) has become an appealing and popular paradigm to study the extent to which non-visible stimuli are still processed. CFS is a variant of binocular rivalry in which high-contrast dynamic patterns presented to one eye effectively suppress stimuli presented to the other eye for a time period in the order of seconds. A range of studies relying on CFS claim to have provided evidence for high-level processing of suppressed stimuli, contrary to findings obtained using classical binocular rivalry paradigms. In this talk, I will present three studies that aim to challenge the existence of high-level unconscious visual processing during CFS. We first replicated the finding that a Kanizsa square configuration breaks suppression faster than a random configuration, but observed that this is due to low-level differences in the configurations rather than the extraction of the illusory surface during suppression. Second, we aimed to replicate the finding that images containing semantically incongruent object-background relationships break suppression faster their congruent counterparts. We did not succeed in replicating the original effect, yet a sequential analysis of the data showed that, at several steps throughout the data collection process, the p-value of the scene congruency effect exceeded the statistical significance threshold. In contrast, a Bayesian analysis of the data showed a gradual accumulation of evidence in favor for the absence of an effect. In a second b-CFS study, we investigated whether word stimuli are processed up to the semantic level during suppression. We failed to obtain any evidence that word stimuli broke suppression differentially from pseudo- or non-word stimuli. These findings can be explained from the perspective that suppression through CFS might act at a level too low in the visual cortex for high-level processes to manifest. The implications for the usefulness of CFS as a method to study unconscious visual processing in general will be discussed.

Training perceptual awareness in a visual discrimination task

Dalila Achoui¹ & Axel Cleeremans¹

¹ Université Libre de Bruxelles, Belgium

According to the Radical Plasticity Theory, consciousness is a dynamic process that is shaped by learning mechanisms. In this theory, second-order networks (used for metacognitive judgments) learn about the activity of first-order networks (primary perceptual decisions), which means that in order to give confidence judgments for a perceptual decision these second-order networks need to be accessed. Availability to consciousness is then thought to depend on the extent to which that second-order network 'knows' about the first-order network. Based on this idea we performed a perceptual learning study with a training phase of five days during which two conditions were contrasted. In the control condition participants were required only to respond to the primary perceptual task, while in the second condition participants were required to provide a confidence rating in addition to their first-order perceptual decision. It is hypothesized that by focusing learning mechanisms on these second-order networks, perceptual awareness, as measured within the type II Signal Detection Theory framework (meta-d'and criterion), will improve in the experimental condition as compared to the control condition. Results will show whether this manipulation will indeed be able to increase perceptual awareness of visual stimuli.

Unreportable switches in bistable perception produce negligible fronto-parietal BOLD activity

Tomas Knapen¹, Randolph Blake², & Jan Brascamp³

¹ *Vrije Universiteit Amsterdam, Netherlands*

² *Vanderbilt University, USA and Seoul National University, Republic of Korea*

³ *Michigan State University, USA*

To make a covert decision or initiate a motor act, executive systems in our brains fluidly reorganize to find a stable neural state corresponding to the decision or movement. It is unclear whether sensory systems can endogenously reorganize in similar ways, or whether executive input is needed for sensory systems to shift from one stable state to another. We developed a procedure in which perceptual state demonstrably switches between dominance of different input patterns, yet the switches themselves are so inconspicuous as to become unreportable, minimizing their executive consequences. We used binocular rivalry, a paradigm in which sensory ambiguity arises from the presentation of markedly different visual input to each eye. In our case, the two eyes were stimulated by perceptually similar, dynamic random dot kinematograms, in which we maintained the interocular conflict that causes binocular rivalry. Using this stimulus paradigm, observers perceive virtually no switches. But, by periodically presenting opposite motion directions to the two eyes, motion direction reports allow us to reconstruct the time course of eye-dominance. This implicit reconstruction shows that switches do occur when imperceptible, with time-courses comparable to fully visible binocular rivalry switches. We find fMRI and pupil evidence for engagement of executive functions on fully visible switches, but negligible activations if the perceptual switch is unreportable. Thus, the ability to rapidly and autonomously reorganize, commonly observed in higher-order cortical areas, is also present within sensory regions, and may be ubiquitous among neural networks across the human brain.

S10: Invited symposium

**Coming of age: The role of executive functioning in
ASD during (young) adulthood**

Room: MOL 5.01

Organizer & chair: Dieter Baeyens¹

Discussant: Lien Van Eylen¹

*¹ Research unit Parenting and Special Education, KU Leuven
Leuven Autism Research, KU Leuven*

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by shortcomings in social communication and interaction, and by repetitive/stereotyped behaviors, interests or activities. The phenomenology of ASD in childhood has been explained by several cognitive theoretical accounts, for instance the theory of Executive Functions. Although it is generally acknowledged that ASD persists into adulthood, research in this age period remains scarce. In this symposium we set out to determine the validity and the impact of the theory of Executive Functions in ASD during (young) adulthood. In the first part of the symposium the exact nature of executive dysfunctioning (EDF) in ASD is determined across the lifespan and investigated in relation to other cognitive and social constructs (e.g., false belief test). In the second, applied part of the symposium, the impact of age-specific EDF on functioning and participation is explored in two domains of functioning that are typically associated with young adulthood but are perceived to be problematic in individuals with ASD. One contribution investigates the impact of EDF on (meta)cognitive and academic skills in young adults with ASD who are enrolling in higher education. A second contribution focuses on the association between EDF in ASD and driving skills. As such, the symposium aims to highlight uncharted territory for follow-up research and implications for clinical and educational practice.

Executive functioning across the ASD lifespan: An overview

Hilde M. Geurts¹ & Dr. Leo Kannerhuis²

¹ *Dutch Autism and ADHD research Center (d'Arc), Department of Psychology (section Brain and Cognition), University of Amsterdam, the Netherlands*

² *the Netherlands*

Since a few decades various researchers set out to test the executive functioning account of ASD. This led to a change in perspective on how executive functions such as inhibition, working memory, and planning and day-to-day challenges in ASD are related. In the current talk a theoretical overview as well as recent data will be presented. Various recent meta-analyses (e.g., on inhibition and planning) and studies focusing on the adult life span will be discussed, including a recent study of people with ($N=118$) and without ASD ($N=118$) aged 20 to 80 years. In adulthood some individuals still have executive function problems, however this differs across executive functioning domains and in general the problems seem to be less severe. The original view of the executive functioning theory that executive functioning problems are the primary cause of the observed symptoms does not hold as it is neither specific nor universal. However, there are ways we can still use the executive functioning framework in both research and clinical practice. It is of importance to incorporate a developmental perspective and to focus on understanding individual differences in executive functioning in adults with ASD.

The interplay between executive functioning and theory of mind

Roeljan Wiersema¹

¹ *Universiteit Gent*

Both Executive Functioning (EF) and Theory of Mind (ToM) impairments have been argued to play a causal role in ASD. Behavioral and neuroimaging research suggests a link between EF and ToM. Still, (neuroimaging) studies investigating the interplay between them are scarce, but are important to better understand both EF and ToM deficits in ASD. Neurotypical adults and adults with ASD performed ToM and EF (inhibitory control) tasks, while neural responses were recorded, either with EEG or fMRI. In the EEG study, false belief processing elicited a P3-like component, which was found to be correlated with the No-Go P3 as observed in the Go/No-Go task. FMRI results showed, besides activation in TPJ, bilateral activation in dlPFC for false versus true beliefs. Analyses on the ASD data are ongoing and results will be presented at the conference. Both the EEG and fMRI findings indicate a significant role of general inhibitory control in ToM. With regard to ASD, we hypothesize reduced TPJ activation, reflective of a ToM deficit. In addition, we expect a relatively greater dependence of ToM performance on EF and associated brain areas in adults with ASD.

Cognitive skills and study strategy of higher education students with autism spectrum disorder

Dieter Baeyens^{1,2}, Ilse Noens^{1,2}, Laura Mattys^{1,2}, & Wim Tops^{1,2,3}

¹ *Department of Parenting and Special Education, KU Leuven, Belgium*

² *Leuven Autism Research (LAuRes), KU Leuven, Belgium*

³ *Department of Neurolinguistics, University of Groningen, the Netherlands*

The number of students with an autism spectrum disorder (ASD) in higher education is increasing. However, students with ASD seem to have significantly lower chances of graduating from higher education than their peers. To have a clearer idea of what types of support could be useful, we set out to determine the quality of the basic cognitive skills (associated with successful academic performance; Study 1) and the study strategies used by the students with ASD (Study 2). In Study 1, 26 first year bachelor students with ASD were compared to 52 controls for a large number of cognitive skills (e.g., intelligence, processing speed) as well as literacy skills (e.g., text reading, text comprehension). In qualitative Study 2, a Think Aloud Protocol (TAP) was used to determine the study strategies used during 4 tasks (e.g., geography and mathematics). In Study 1, there were more similarities than differences between both groups in the cognitive domain. As for abstract reasoning students with ASD even outperformed the controls. Students with ASD were weaker in word reading, especially for pseudowords, but results were equal for text comprehension and arithmetic. In Study 2, students with ASD showed more problems with the selection of relevant information and less metacognitive skills compared to controls. Even though results show that students with ASD are not necessarily weaker in all areas tested, specific compensatory means will still be useful for (some) students with ASD in higher education. The findings will be interpreted in the light of the EDF, central coherence and Theory of Mind framework.

The relation between executive functioning and driving errors in a sample of young novice drivers with an autism spectrum disorder

Veerle Ross¹, Ellen M. M. Jongen¹, Marleen Vanvuchelen², Kris Brijs^{1,3}, Giovanni Vanroelen³, Irene Maltagliati⁴, Tom Brijs¹, Caroline Beelen^{2,5}, Geert Wets¹

¹ *Transportation Research Institute (IMOB), School for Mobility Sciences, Hasselt University*

² *Rehabilitation Research Center (REVAL), Hasselt University*

³ *Faculty of Applied Engineering Sciences, Hasselt University*

⁴ *Faculty of Psychology and Neuroscience, Maastricht University, the Netherlands*

⁵ *Parenting and Special Education, Faculty of Psychology and Educational Sciences, KU Leuven*

Driver-errors can be considered by-products of executive functioning. As autism spectrum disorders (ASDs) are often accompanied with executive functioning difficulties, it is possible that, when compared to typically developing young novice drivers, young novice drivers with ASD will show an increased or divergent rate of driving errors. The current study extends on previous research by investigating driving errors, and the relation with underlying executive functioning, in a sample of young novice drivers with ASD. The driving performance of 19 young novice drivers with ASD is compared to a control group of 21 typically developing young novice drivers. The research consisted of two segments: a driving simulator scenario and computer task battery. Several driving behavioural measures were considered, including the number of collisions, brake reaction time stops at traffic lights and red-light-running, as well as the mean time and value of both speed exceedance and centreline crossing. The executive functions (working memory, attention and inhibitory control) were measured with three different tasks: stop-signal reaction time, useful field of view, and working memory task. Results indicated no group differences regarding inhibitory control and driving performance; on the other hand the control group appeared to perform better in the tasks related to working memory and attention. More research will be necessary to draw any firm conclusions

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regarding driving errors, and their relation with underlying executive functioning in ASD.

S11: Symposium

The study of sexual violence

Room: Conferentiezaal

Organizer & Chair: Tine Vertommen^{1,2}

¹ *Thomas More University College*

² *University of Antwerp*

Sexual violence against children is a major public health problem worldwide. Prevalence rates of penetrative child sexual abuse vary between 5% and 10% for girls, and up to 5% for boys. Up to three times this number are exposed to any type of sexual abuse (Gilbert et al, 2009). Knowing that sensitive topics, such as sexual violence perpetration, suffer from an extremely high dark number, these rates only indicate a fraction of the burden. During the last decades, research into the prevalence, sequelae, victim and offender characteristics of child sexual abuse has experienced tremendous growth. This symposium aims to provide an overview of ongoing Belgian studies in the field of sex offender research, preceded by a critical discussion of research design in psychological research. Hubert van Puyenbroeck reflects on the epistemological differences between quantitative and qualitative research methodologies, and offers us some illustrative examples of mixed method study designs, that might be of great value in the study of sexual perpetrators. After this opening presentation, the symposium continues with three presentations on sexual violence. Tineke Dilliën will present an experimental study on neurocognitive functioning in sex offenders. The study takes a closer look at reward-based learning in sex offenders. The second presentation focuses on emotional change in a sex offender treatment program. Using a mixed method study design, Ellen Gunst investigates whether emotional change occurs throughout a treatment program, and whether more emphasis needs to be put on emotional aspects during treatment. The last presenter, Tine Vertommen, focuses on sexual violence against children in sport, surveyed in a cross-sectional cohort study in the general population. This study aims to cluster characteristics based on the position, gender and number of

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perpetrators of sexual violence in sport to give an overview of the most common perpetrator profiles.

The whole is other than the sum of the parts: Epistemological reflections on mixed-methods research in psychological sciences

Hubert Van Puyenbroeck^{1,2}

¹ *Vrije Universiteit Brussel*

² *Katholieke Universiteit Leuven*

There is a growing interest in qualitative research practices in psychological research. However, both quantitative and qualitative oriented researchers often question one another on their epistemological stances, or are in no way interested in findings that are based on other research methods. Both quantitative and qualitative research relies on original and specific epistemological assumptions. Mixed-methods designs acknowledge the ontological stances of both perspectives. As their merits can be viewed as complementary, this presentation aims to facilitate the growing scientific debate on mixed-methods research designs by discussing both merits and thresholds. When studying sensitive topics in the field of sexology and forensic psychology, both quantitative and qualitative stances open up complimentary perspectives to gain knowledge in this field of interest. Based on a review of both literature on epistemological questions as well as published mixed-methods studies, some illustrative examples of mixed-methods studies show a diversity of potential mixed-methods research designs. Considering designs that include both quantitative and qualitative approaches in psychological sciences opens up opportunities to bridge the gap between quantitative and qualitative orientations. Literature shows the merits of this synergy of a mixed-methods approach - between its clear limits. We meet many difficulties in publishing findings based on a mixed-methods study design. Besides the aspect of a time-consuming research process, journals may be driven by one of both scientific orientations and consequently may not be eager to publish otherwise oriented studies.

Reward-based learning in child molesters

Tineke Dilliën^{1,2}, Inti Brazil³, Bernard Sabbe², & Kris Goethals^{1,2}

¹ *University Forensic Centre, Antwerp University Hospital*

² *Collaborative Antwerp Psychiatric Research Institute (CAPRI), University of Antwerp*

³ *Radboud University Nijmegen*

Although neurological factors have been linked to the aetiology of sexual offending since the publication of *Psychopathia Sexualis* (Krafft-Ebbin, 1886), little research has examined the neurocognitive functioning of sexual offenders. The few studies done, focused on cold executive functions (EF), involving no emotional arousal. In contrast, little or no attention has been paid to warm EF that involves emotional and motivational aspects. The current study examines warm EF, especially reward-based learning in child molesters. In addition, processes that underlie reward-based learning, such as sensitivity to (social) reinforcement are studied. The following instruments are administered to a group of 70 incarcerated child molesters and two control groups, namely a group of 35 incarcerated aggressive offenders and a group of 35 healthy controls: (1) a passive avoidance learning task (Blair et al., 2004) and a probabilistic reversal learning task (Budhani, Richell, & Blair, 2006), assessing reward-based learning; (2) the BIS/BAS scales (Carver & White, 1994), the Sensitivity to Punishment and Reward Questionnaire (Torrubia, Avila, Molto, & Caseras, 2001) and the Point Scoring Reaction Time Task (Colder & O'Connor, 2004), measuring reinforcement sensitivity and (3) the facial expression recognition task (Blair et al., 2004), assessing the ability to recognize emotional facial expressions. Building on neuroimaging studies, we expect that child molesters will exhibit reward-learning deficits. The results can be used as a starting point for further research on the neurocognitive functioning of sexual offenders.

Facilitating emotional change in sex offenders

Ellen Gunst^{1,2} & Mattias Desmet²

¹ *P.C. St-Amandus, Beernem*

² *Ghent University*

At the present state of affairs, forensic treatment of sexual offenders predominantly focuses on cognitive change. Some theoretical models and research findings, however, suggest that emotional processes underlie offenders' behavior and thus should be addressed in therapy as well. The present study addresses two major research questions: 1. Does emotional change occur throughout a comprehensive inpatient psychotherapy program for sex offenders? 2. Is there an incremental value of an emotion-focused experiential psychotherapy (EFEP) in such a program? We use a quasi-experimental ABCA single case design in a clinical setting to address these questions. Twenty patients will be followed through four treatment phases (A = pre-treatment baseline, B=treatment program without EFEB, C=treatment program with EFEP, A=post-treatment baseline). The Difficulties of Emotion Regulation Scale (DERS) and the Observer Measure of Affect Regulation (OMAR) will be used on regular basis to assess emotional change. Furthermore, changes in negative affectivity will be assessed by means of mass spectrometry of saliva samples on a monthly basis. The data will be analyzed by means of mixed quantitative-qualitative methods. We predict scores on DERS and OMAR will indicate more and qualitatively different change in affect regulation in phase C compared to phase B. Strengths of this naturalistic study include detailed analysis of the data at the level of the single case, multi-method assessment of process and outcome. The study is a good example of how practice-informed research can lead to research-informed practice.

Perpetrators of sexual violence against children in sport

Tine Vertommen^{1,2}, Nicolette Schipper-van Veldhoven³, & Filip Van Den Eede^{1,4}

¹ Collaborative Antwerp Psychiatric Research Institute (CAPRI), University of Antwerp

² Thomas More University College, Antwerp

³ Netherlands Olympic Committee and Netherlands Sports Confederation (NOC*NSF)
& Windesheim University of Applied Sciences, Zwolle

⁴ Antwerp University Hospital

During the late nineties the sporadic scientific attention to the issue of sexual violence against child athletes began to increase. The prevalence of sexual harassment and abuse varies between 5 and 50%. So far, remarkably little attention was paid to describing perpetrator characteristics, as court data and media reports almost exclusively feature a male coach as perpetrator of sexual violence in sport. A cross-sectional, retrospective design, using an online survey, provides a quantitative assessment of sexual violence in a representative sample of adults, prescreened on having participated in organized sport before the age of 18 ($N=4043$). Besides reporting on the prevalence of sexual violence, this study focusses on the perpetrator characteristics, as reported by the victim-respondents. This study aims to cluster characteristics based on the position, gender and number of perpetrators of sexual violence in sport, in relation to the victim's age and gender, to give a descriptive overview of the most common perpetrator profiles. About 14% of the total sample ($n=578$) reports at least one experience with sexual violence in sport. The majority of victim-respondents (66%) indicate that there was more than one perpetrator involved in the most severe sexual violence event (or series of events) experienced. 45% of victims reported there was an athlete involved as perpetrator, 19% said there was a coach involved. The most common perpetrator profiles were 'one or several male adults' (38%), 'one male coach' (12%) and 'several male athletes' (10%). These data shed new light on the profile of perpetrators of sexual violence in sport, featuring peer athletes and adults in the sports organizations, apart from the coach, to be possible perpetrators of sexual violence.

S12: Oral session

Social dynamics

Chair: Tim Vanhooymissen (Thomas More)

Room: MOL 3.01

**Reducing negative social experiences among children at risk:
Effectiveness of the Flemish version of the Good Behavior
Game 'TOPspel'**

Geertje Leflot¹ & Hilde Colpin²

¹ *Thomas More Antwerpen*

² *KU Leuven*

Children with behavioral problems are at risk for negative social experiences, such as poor peer relations (e.g., Leflot et al., 2010) and victimization (e.g., van Lier et al., 2012), compromising long-term mental health (e.g., Rudolph et al., 2011). TOPspel (De Sleutel et al., 2014), adapted from the evidence-based American intervention Good Behavior Game (Dolan et al., 1989), is a universal classroom-based preventive intervention aiming to reduce behavioral problems by facilitating positive social interactions between children. In the current study, we examined whether TOPspel protected at risk children from these negative social experiences. A quasi-experimental research was set up in ten elementary schools. Five schools implemented TOPspel in 4th to 6th grade from September to June ($n = 430$). The five other schools functioned as the control group ($n = 305$). Self-reports on social experiences (victimization; peer relations) were collected in September (baseline) and June (posttest). At risk children were identified using self-reports on attention difficulties and impulsivity ($n = 119$) and peer nominations of aggressiveness ($n = 52$) in September. The effect of TOPspel on social experiences was analyzed using multilevel regression analyses. At baseline children at risk had significantly more negative social experiences than other children. Throughout the school year the peer relations of at risk children in the TOPspel classes improved, while those of the control children

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deteriorated. Similar results were found for victimization. These findings indicate that a universal preventive intervention is able to protect at risk children from negative peer experiences. Moreover the study extends the evidence on the effectiveness of the GBG in general and provides evidence for the effectiveness of the Flemish version in particular.

Poverty & obesity: How poverty and hunger influence food choices

Maria Almudena Claassen¹, Olivier Klein¹, & Olivier Corneille²

¹ *Université Libre de Bruxelles (ULB), Belgium*

² *Université Catholique de Louvain-la-Neuve (UCL), Belgium*

Levels of overweight and obesity are higher in individuals from low socioeconomic status (SES) and those experiencing food insecurity. Previous research has shown that poverty cues make people eat more calories. The aim of this research was to investigate whether these cues influence individuals from different SES levels differently. Two studies were conducted online in which participants were randomly allocated to a scenario in which they were told that their current income level was relatively lower (poor condition) or higher (rich condition) than others. They then completed a money and food discounting task. A significant interaction was found between condition and income: people with lower incomes discounted more when they were in the poor (vs. rich) condition, whereas people with higher incomes discounted less when they were in the poor (vs. rich) condition. The findings for people with high (vs. low) hunger were identical to those of low (vs. high) income, indicating the importance of investigating food insecurity alongside income deprivation. The above results show that, under conditions of scarcity, poor and hungry people react more impulsively towards monetary and food rewards. This has implications for health policies in different SES environments. In order to better understand the underlying psychological mechanism, future studies will examine possible moderators (e.g. personal control, social anxiety).

Intergroup reconciliation between Flemings and Walloons: The predictive value of cognitive style, authoritarian ideology, and intergroup emotions

Jasper Van Assche¹, Dries Bostyn¹, Jonas De keersmaecker¹, Benoit Dardenne², & Michel Hansenne²

¹*Department of Developmental, Personality and Social Psychology, UGhent*

²*Department of Psychology: Cognition and Behavior, University of Liege*

Testifying to the gap in fundamental research on positive intergroup outcomes, we investigated reconciliation attitudes in a non-violent political context (i.e., the linguistic conflict in Belgium). By incorporating both important predictors of negative outgroup attitudes (i.e., individual differences in rigid cognitive styles and authoritarian ideologies), and important predictors of reconciliation (i.e., intergroup emotions), we aimed to contribute to a more comprehensive theoretical framework of all aspects of intergroup relations. We recruited a Flemish ($N = 310$) and a Walloon ($N = 365$) undergraduate student sample to test the proposed model. Path analysis with maximum likelihood estimation were conducted using the Lavaan package. In both samples, important similar patterns were found. More in particular, the need for cognitive closure appeared to be the basic predictor of right-wing attitudes (i.e., authoritarianism and social dominance orientation) and essentialist thinking, which were then associated with more outgroup empathy and trust, and less outgroup anger. Furthermore, outgroup trust and empathy were positively related to reconciliation. Interestingly, some remarkable differences were found, such as the lack of a significant relation between need for closure and social dominance orientation and the less pronounced predictive role of essentialism in the Walloon sample. Considering the ongoing public and political debate about the linguistic conflict in Belgium, these findings shed a new light on how individual differences relate to specific outgroup emotions, and how these are associated with important intergroup outcomes in the face of intergroup conflict.

When the past predicts the future: The effect of historical analogies on conflict-related judgments

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³ *Belgian Fund for Scientific Research (FRS-FNRS)*

When the Crimean crisis started to draw international focus on March 2014, former US Secretary of State Hilary Clinton said that Putin's actions were similar to "what Hitler did back in the 30's". Besides being among the first to effectively reach the Godwin Point, H. Clinton was making use in this case of a rhetorical device common both in public and political discourses: a historical analogy; i.e., a comparison between a present and a past situation. It has been demonstrated that such historical analogies can shape individuals' perceptions and judgments regarding a current situation (e.g., Gilovich, 1981). More importantly, it allows individuals to make predictions about the future outcome following a course of action in a given situation (Khong, 1992). However, the cognitive processes underlying this phenomenon have yet to be specified. Drawing on cognitive sciences frameworks on analogy (e.g., Gentner, 1983), we argue that the predictive power of historical analogies – which constitute their core feature – involves a process of causal reasoning. The latter allows to infer that if two events (past and present) share a common causal antecedent, then they are likely to share the same outcome (cf. Read, 1984). A series of experimental studies testing this assumption has been conducted. Preliminary results seem consistent with the hypothesis, but point to the importance of (perceived) knowledge about world events as a moderator of analogy-based prediction. Findings will be discussed specifically with regards to their contributions to the fields of collective memory and decision-making under uncertainty.

S13: Oral Session

Social behaviour

Room: MOL 4.01

The influence of self-interest on the perception of others

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¹ *Université Catholique de Louvain, Belgium*

² *Université de Lausanne, Switzerland*

A great deal of research shows that two dimensions, called Warmth and Competence, underlie social perception. According to Peeters (1992), these two dimensions reflect what is profitable from the perspective of the other vs the self: warmth traits are other-profitable because they unconditionally benefit others (my warmth promotes the well-being of people dealing with me) while remaining ambiguous for the self and, conversely, competence traits are self-profitable because they unconditionally benefit the trait possessor (my competence helps me achieve my goals) and are ambiguous for others. But in some circumstances, one can benefit from other's competence. In this case, competence becomes other profitable and should logically affect warmth perceptions. In a series of studies using vignettes and real interactions, we show that the perception on the warmth dimension depends on whether the perceiver benefits or not from target's competence. Our data indicate that a competent collaborator or an incompetent competitor are both perceived as warm because they facilitate perceiver's success. Conversely, an incompetent partner or a competent competitor are both perceived as cold because they represent an obstacle to perceiver's goal achievement. Furthermore, these effects only showed up when the perceiver attached a great value to the success of the task, which supports our interpretation that these perceptions on the warmth dimension arise when the self-interest of the perceiver is affected.

“Only obeying orders”: Coercion changes the sense of agency in the human brain

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People may deny responsibility for negative consequences of their actions by claiming that they were “only obeying orders”. The “Nuremberg defense” offers one extreme example, though it is often dismissed as merely an attempt to avoid responsibility. Milgram’s classic laboratory studies reported wide-spread obedience to an instruction to harm, suggesting that social coercion may alter mechanisms of voluntary agency, and hence abolish the normal experience of being in control of one’s own actions. However, Milgram’s and other studies relied on dissembling and on explicit measures of agency, which are known to be biased by social norms. Here, we combined coercive instructions to administer harm to a co-participant, with implicit measures of sense of agency, based on perceived compression of time intervals between voluntary actions and their outcomes, and with electrophysiological recordings. In two experiments, an experimenter ordered a volunteer to make a key-press action that caused either financial penalty or demonstrably painful electric shock to their co-participant, thereby increasing their own financial gain. Coercion increased the perceived interval between action and outcome, relative to a situation where participants freely chose to inflict the same harms. Interestingly, coercion also reduced the neural processing of the outcomes of one’s own action. Thus, people who obey orders may subjectively experience their actions as closer to passive movements than fully voluntary actions. Our results highlight the complex relation between the brain mechanisms that generate the subjective experience of voluntary actions and social constructs, such as responsibility.

Finding coherent cues: When facial trustworthiness affects causal and intentional processing during moral judgment

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Recent cognitive approaches of morality have shown that moral judgment is determined by the analysis of the causal and intentional properties of the action. However, there is a growing body of evidence showing that the characteristics of the moral agent (e.g. social role, past behavior) can also affect the judgment of the actions he commits. In this study, we investigated to what extent the first impression of trustworthiness perceived from someone's face impacts judgments of permissibility and through which analysis, causal or intentional, this modulation is brought about. Four hundred and eighty-seven participants took part in our online experiment. They were presented with a set of 6 moral scenarios that systematically manipulated the type of action (intentional, unintentional, ambiguous) and the agent's facial characteristics of trustworthiness (trustworthy, untrustworthy). For each scenario, participants were asked to judge the permissibility of the moral action. They also had to make evaluations about the wrongness of the agent's intention and about the role he played in causing the negative outcome. Results showed that, when the agent's intention was ambiguous, actions committed by trustworthy agents were judged more permissible than those committed by untrustworthy agents. Moreover, the intentions of trustworthy agents were perceived as less wrong and the causal role that trustworthy agents played in causing negative outcomes was judged as less strong. Thus, when little is known about an agent's true intentions, perceived levels of trustworthiness derived from someone's face affect moral judgment through both the causal and intentional analyses of the action.

Neural correlates of trust repair by financial compensation

Tessa Haesevoets¹, David De Cremer², Alain Van Hiel¹, & Frank Van Overwalle³

¹ *Ghent University*

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Trust violations are ubiquitous in human interactions, making efforts to repair trust highly relevant. Yet, research on the underlying brain mechanisms of trust repair is scarce. The present study examined the neural circuitry of trust violations and trust repair in exchange situations. Participants placed in the scanner played the role of recipient in a series of dictator games with allocators who (unknown to them) were preprogrammed. Trust was violated through an unequal division of resources, while afterwards trust was repaired by a financial compensation that restored equality. The results revealed that receiving compensation (vs. no compensation) after an unequal division resulted in increased activation in the left cerebellum, bilateral inferior parietal lobule (extending to the temporoparietal junction), bilateral superior frontal cortex, bilateral anterior insula, and left inferior frontal cortex. These brain areas have previously been associated with forgiveness, and more generally emotion experience and regulation. The current findings thus emphasize the relevance of financial compensation in restoring violated trust in exchange situations and the important role of forgiveness in this process.

S14: Symposium

**Mouse behaviour in preclinical Alzheimer research –
challenges and opportunities**

Room: SAN 1.3

Rudi D'Hooge¹

¹ KU Leuven - Laboratory of Biological Psychology

Mouse models have been used in research about the pathogenesis and possible prevention or treatment of Alzheimer's disease for more than 20 years already. The oldest models were based on pharmacological and surgical manipulations that related to the neurochemical and regional defects occurring in brains of Alzheimer's disease patients. Recent models have focused on mimicking the pathobiochemical and histopathological features of Alzheimer's dementia using techniques derived from molecular genetics. However, the validity of these mouse models eventually depends on the occurrence of functional defects that resemble the behavioral and cognitive defects in Alzheimer's disease patients. This has challenged behavioral neuroscientists and comparative psychologists to develop tests and test batteries for reliable behavioral assessment in laboratory rodents in a methodological approach not dissimilar to diagnostic human neuropsychology. Tests of spatial learning and memory rank amongst the most complex behavioral tasks in rodents, and may be similar to declarative memory functions in humans. Other rodent cognitive tests include tests of behavioral flexibility, reversal learning, discrimination learning and multiple choice tasks. Several tests have been devised to assess emotional and social behaviors in lab rodents as well. Despite research efforts to improve the reliability and validity of rodent behavioral tests, the search for better and more relevant tests remains a major challenge in preclinical and translational Alzheimer's research. It may even represent the major bottleneck in the slow progression and relatively limited translational success of therapeutic research and development in this field.

The course of decline in prefrontal cortex related functioning the APP/PS1 transgenic mouse model of Alzheimer's disease

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Laboratory mice are often used to study the pathogenesis and potential treatments of brain disorders, including Alzheimer's disease (AD). Besides learning and memory impairment, deficits in prefrontal cortex (PFC) related functions are among the core symptoms of this disorder. In the interest of the validity of preclinical animal research, it is of importance to investigate if AD mouse models show this PFC-symptomatology. A battery of sensitive behavioral tests to measure attention, motivation and working memory is conducted at different ages (3, 6, 9 and 12 months) in a transgenic mouse model of AD (APP/PS1-21 mice). These mice start showing amyloid- β plaques at 6 weeks of age in the neocortex. Later on amyloid deposition spreads to the dentate gyrus and CA1 region of the hippocampus, as well as the striatum, thalamus and brain stem. The gradual effects of this pathophysiology on cognitive functioning are chronologically mapped. Transgenic animals are compared to their age and gender matched littermates. The results indicate that the course of cognitive AD-pathology in this mouse model is only partially consistent with human findings. We didn't find a decline in motivation or deficits in sustained attention. On the other hand, spatial memory was affected at an early stage, as found in human patients, and working memory significantly declines over time. In an ecologically valid mouse model of AD, the chronology of PFC-deficits should parallel that of human patients. Our results show only a partial overlap. These findings have great preclinical implications for understanding the role of PFC in AD and the use of this mouse model for treatment purposes.

Prefrontal cortex- and hippocampus-dependent cognitive and synaptic alterations in APP knock-in –NLGf- mice

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Key histopathological features of Alzheimer’s disease (AD) are aggregates of amyloid β -peptide (A β), which form extracellular plaques, and intracellular accumulation of hyperphosphorylated protein tau, designated as neurofibrillary tangles (NFTs). Deficits in executive functions and alterations in cognitive flexibility, which indicate PFC and HC dysfunction, could serve as potential early indicators of neurodegenerative diseases. Mouse models of Alzheimer’s disease have been powerful resources to elucidate the neurobiological mechanisms underlying the disease. We used a novel knock-in model where endogenous APP is replaced human APP (NL/G/F). NL/G/F mice develop robust A β amyloidosis without APP overexpression at 3 and 6 months of age. We investigated the pathogenic mechanisms that affect the functional integrity of the PFC and HC by evaluating high-order cognitive functions in a complex behavioral test battery: Touchscreen boxes, Morris Water Maze (MWM), Contextual Fear Response (CFR), Elevated Plus Maze (EPM), Social Preference-Social Novelty (SPSN), T-maze, Open field and Cage activity, that depend on these brain structures. Since AD is predominantly a synaptopathy, measures of synaptic plasticity, such as long-term potentiation (LTP) and depression (LTD) are expected to be highly sensitive in detecting early signs of synaptic deficits in PFC and HC slices. Our results indicate that impaired extinction learning and decreased spontaneous alternation are associated with the early accumulation of plaques at 4 months. More severe pathology at 6 months interferes with synaptic plasticity in hippocampal and prefrontal slices, as well as with cognitive performance. Our study provides interesting insights into the role of A β pathology for prefrontal and hippocampal functions in this novel APP knock-in mouse model.

Early pathological amyloid induces hypersynchrony of bold resting-state networks in transgenic mice and provides an early therapeutic window before amyloid plaque deposition

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In Alzheimer’s disease (AD), pathological amyloid-beta ($A\beta$) is synaptotoxic and impairs neuronal function at the microscale, influencing brain networks at the macroscale before $A\beta$ deposition. The latter can be detected non-invasively, in vivo, using resting-state-functional MRI (rsfMRI), a technique used to assess brain functional connectivity (FC). RsfMRI was acquired on a 9.4T MRI system. TG25761 and wild-type (WT) mice were scanned before (3, 5 and 8 months) and after $A\beta$ plaques (14, 18 months). PDAPP and WT mice were scanned before $A\beta$ plaques (3, 5 and 7 months). ELISA and histology (thioflavin-S) were performed to determine $A\beta$ load. Then, TG2576 and WT mice were subjected to a 10 week treatment with the 3D6 anti- $A\beta$ antibody (WT and TG2576 PBS sham, WT and TG2576 3D6) after which they were scanned with rsfMRI at 5 months. Mice were then sacrificed for electrophysiology, histology (VGLUT1, GAD65/67) and liquid chromatography/mass-spectrometry (ratio glutamate/GABA neurotransmitters). TG2576 (5 months) and PDAPP mice (3 months) showed hypersynchronized FC before $A\beta$ plaques in the hippocampus and frontal

Sessions 8 - 14

cortex, respectively. Decreased FC occurred only at later stages. Hypersynchronous FC was observed when soluble A β was increased, and was associated with increased VGLUT1/GAD65-67 and glutamate/gaba ratios. Early stage anti-amyloidogenic treatment in TG2576 mice prevented hippocampal hypersynchronous FC, as well as synaptic plasticity impairments and excitatory/inhibitory disbalances. Hypersynchrony of FC may be used as a new non-invasive read-out of early AD and can be recovered by anti-A β treatment, encouraging preventive treatment strategies in familial AD.

Scanning ultrasound opens the blood-brain barrier and improves behaviour in a tau transgenic mouse model of Alzheimer's disease

Ann Van der Jeugd¹, Gerhard Leinenga¹, Rebecca Nisbet¹, & Jürgen Götz¹

¹ *Clem Jones Centre for Ageing Dementia Research, The Queensland Brain Institute, The University of Queensland, Australia*

Alzheimer's disease manifests itself as two different types of lesions in the brain: β -amyloid plaques that form extracellularly and neurofibrillary tangles – composed of hyperphosphorylated tau protein (pTau), which build up inside neurons. Preclinical research is exploring the use of scanning ultrasound (SUS) in the presence of microbubbles, to deliver antibodies (ABs) to the brain. Tau transgenic (Tg) mice were treated for 4 weeks and received AB fragments (30 μ g/ml retro-orbitally) targeting 2N tau against pTau against a specific epitope. This was followed by whole brain SUS (0.7-MPa peak rare fractional pressure, 10-Hz pulse repetition frequency, 10% duty cycle), previously shown to open the blood-brain barrier (BBB) transiently and safely. After the last treatment, mice were tested in the elevated plus maze (EPM) measuring amygdala-related anxiety, and in novel object recognition (NOR) test for hippocampal-dependent memory. In our study we were able to show that SUS opened the BBB and improved the uptake/delivery of the AB as revealed by a massive increase of AB staining colocalized with hippocampal and amygdaloid neurons. Moreover, tau-targeted immunisation aided by SUS successfully restored behavioural deficits in tau Tg mice as reflected by an increase in the time spent in the open arms of the EPM and an increase in the time exploring the novel object in the NOR. Whole brain SUS effectively opened the BBB and assisted in the delivery of ABs and uptake by neurons into the brain of mice. As such, AB-targeted immunisation aided by SUS presents a non-invasive way of drug delivery that may be employed to treat brain-related disorders.

Notes sessions 8 - 14

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**SYMPOSIA & ORAL SESSIONS
SESSIONS 15 - 21**

14u50 – 16u10

S15: Oral session

Construction and application of a new cognitive ability test or how theory enhances practice

Room: MOL 4.02

Organizer: Marlies Tierens¹

Chair: Annemie Bos¹

¹ *Thomas More University College, Applied Psychology, Psychodiagnostics Center, Antwerp, Belgium*

Even though the first intelligence test was constructed at the beginning of the 20th century, the Cattell – Horn – Carroll Theory of cognitive abilities (CHC – model, Flanagan & McGrew, 1997) has been the first comprehensive and empirically validated working taxonomy of human cognitive elements. Since the publication of this theory, it has been used (explicitly or implicitly) as the foundation for most intelligence test batteries. The influence of CHC can be seen in the recent revisions of the Wechsler intelligence batteries (WPPSI-IV, WISC-V, WAIS-IV). As there is no recent version of the WISC-III available for Flanders and the Netherlands, a new Dutch CHC - based cognitive ability test (CoVaT-CHC) was constructed in collaboration with school psychologists in the field. This symposium will show how theory and practice can create innovation. The construction, validity, reliability and application possibilities of this test will be presented.

Theoretical background of a Dutch Cattell-Horn-Carroll based cognitive ability test (CoVaT-CHC)

Marlies Tierens¹, Walter Magez², Katrijn Van Parijs¹, Veerle Decaluwé¹,
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Today's intelligence batteries are often based on the Cattell – Horn – Carroll (CHC) taxonomy. The Dutch Cognitive Ability Test (CoVaT - CHC) is a new CHC-based intelligence battery for children and adults in Flanders. The purpose of the test is to provide insight in general intelligence as well as specific individual cognitive strengths and weaknesses. The basic version (10 to 14 years) measures five broad cognitive abilities: Fluid Intelligence, Crystallized Intelligence, Short-term Memory, Visual Processing and Processing Speed. The extended version measures also Long-term Memory. Both versions consist of verbal and language-reduced subtests thus making the test useful for non-native Dutch speakers. The test can be used for individual or group assessment. This presentation will first describe the construction of the CoVaT-CHC. In addition the results of the confirmatory factor analysis will be presented. A representative sample of 3071 children completed the CoVaT-CHC. Participants ranged from 9 years, 6 months to 13 years, 11 months. Participating children completed the assessment at school in groups of 5 – 25 during four sequential lessons. Data-analyses used structural equation modelling with R package Lavaan. Results show the best fit of the Gf-Gc model, which includes the broad cognitive abilities of the CHC-model without a higher order general intelligence. In addition, results also show high correlations between these broad cognitive abilities. The CoVaT-CHC shows a good construct validity based on confirmatory factor analysis. Results emphasize the use of broad cognitive abilities above the assessment of one general intelligence factor.

Reliability of the Dutch Cattell-Horn-Carroll based cognitive ability test (CoVaT-CHC)

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The Dutch Cognitive Ability Test (CoVaT-CHC) was constructed based on the CHC-model, and is used to provide insight in general intelligence and specific individual cognitive strengths and weaknesses. The basic version (10 to 14 years) measures five broad cognitive abilities: Fluid Intelligence, Crystallized Intelligence, Short-term Memory, Visual Processing and Processing Speed. This presentation focusses on two studies that investigate the reliability of the CoVaT-CHC. In the first study a representative sample of 3071 children completed the basic version of the CoVaT-CHC at school in groups of 5 – 25 during four sequential lessons. Participants ranged from 9 years, 6 months to 13 years, 11 months. To investigate the test-retest reliability about 150 children of the 4th and 6th year of elementary school and 2th year of secondary school filled out the test on two different time periods with an interval of about one month. For the first study, reliability measures for the broad cognitive abilities ranged from .84 (Processing speed) to .96 (Fluid Reasoning), and .97 for total test score. Results of the second study will be presented at the conference. Preliminary results indicate a good to excellent reliability of the basic version of the CoVaT-CHC.

The assessment of CHC-based Cognitive Abilities in School Context

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One of the roles of school psychologists in Flanders is to advise pupils and parents in the transition of elementary to secondary school. School psychologists of CLB (centers for students guidance) experience a lack of instruments to measure cognitive abilities for this purpose. In cooperation, psychologists of CLB and of Thomas More University College did research to develop a new assessment instrument, thereby fulfilling following conditions: the battery is (1) based on the scientific Cattell-Horn-Carroll (CHC) model of intelligence, (2) organized as a modular system and (3) usable to assist school psychologists in decision-making and giving action-oriented advice to pupils, parents and teachers. (4) Individual and group assessments are possible. (5) The results are accepted by the government agency of Flanders. In addition to traditional norms for different age groups (9y6m-13y11m), this test also includes unique norms for class groups (e.g., intellectual disability, learning disorders), which provides great opportunities for advising children in their school career. This makes the test a valid assessment battery for educational counselling and an example of evidence based practice. This presentation will focus on the application of the basic version of the CoVaT-CHC, which is used to measure specific individual cognitive strengths and weaknesses in a schooling context.

CoVaT-CHC in practice: A diagnostic test for bridging students in the faculty of engineering technology

Lynn Van den Broeck¹ & Greet Langie¹

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The Faculty of Engineering Technology (FET) at KU Leuven counts approximately 800 bridging students. Unfortunately the success rate is comparable with the success rate of the first-year bachelor's students (about 50%). To provide students information about their academic readiness, a new diagnostic test was implemented. The test consisted of three parts: mathematics, four CoVaT-CHC subtests (logical reasoning, point series, proverbs, and folding boxes), and LASSI (Learning And Study Strategies Inventory). Here, the main focus is CoVaT-CHC. In March – June 2015 all students, who were considering to bridge in FET in 2015-2016, were invited to participate voluntarily ($N=93$). To gather more data, the test was organised a second time at the beginning of the academic year while they were already enrolled in the bridging programme ($N=32$). Each student received individual feedback afterwards. The highest mean score was obtained for folding boxes ($M=80\%$, $SD=14\%$), followed by point series ($M=63\%$, $SD=9\%$), proverbs ($M=62\%$, $SD=12\%$), and logical reasoning ($M=38\%$, $SD=15\%$). The general, weighted total showed a normal distribution. Proverbs did not reveal significant correlations with any of the subtests, the other three correlated significantly with each other. None of the subtests correlated significantly with the exam results. By combining folding boxes, proverbs, and mathematics a significant correlation was found ($r=0.21$; $p= 0.045$). Keeping in mind that these students followed a STEM education, the highest mean score for folding boxes did not come as a surprise. The correlations with the exam results were lower than expected, since there was reason to believe that these tests included engineering attributes.

S16: Oral Session

Face Perception

Chair: Valérie Goffaux (UCL)

Room: MOL 1.01

At a single glance: selective categorization of natural faces images in the infant brain

Adélaïde de Heering^{1,2} & Bruno Rossion²

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² *Institute of Research in Psychology and Institute of Neuroscience,
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Human adults detect faces in natural scenes at a single glance but the ontogeny of this remarkable ability is unknown. Here we introduce an approach in which 4- to 6-month-old human infants view natural (i.e., unsegmented) images of objects at a rapid frequency of 6 images/s, allowing only one fixation by image. Highly variable pictures of faces are interleaved every five stimuli, i.e., at 1.2 Hz (6 Hz/5). A few continuous stimulation sequences of 20 seconds lead to a robust electroencephalographic (EEG) response exactly at the frequency of 1.2 Hz, reflecting the infant's brain differential response to faces and non-face stimuli. This objective (i.e., pre-defined in frequency) face-selective EEG response emerges despite faces varying in size, viewpoint, illumination, expression, age and gender, demonstrating a high degree of generalization at this young age. The periodicity constraint and the large selection of stimuli ensures that this response is free of low-level visual confounds, as supported by the absence of any face-selective response for phase-scrambled stimuli and the lack of category-selective responses to pictures of birds presented under the same conditions. Moreover, right hemispheric lateralization of the face-selective response emerges well before reading acquisition in the infant brain. Overall, these observations provide a direct signature of the developing brain's ability to categorize visual stimuli at a single glance. The simplicity,

objectivity and sensitivity of this fast periodic visual stimulation (FPVS) approach in EEG opens an avenue for understanding infants' high level perception of natural visual scenes with the same constraints as in adults.

Vertically oriented cues to face identification are susceptible to colour manipulations

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Most humans can identify familiar faces effortlessly. Face identity processing has been suggested to primarily rely on horizontally-oriented cues. However, most evidence for a horizontal advantage in identity processing comes from experiments using grayscale photographs, discarding the potential contribution of the colour cues which characterize natural viewing conditions. In a behavioral experiment, we tested whether colour cues influence the horizontal dependence of facial identity processing. Participants were familiarized with two computer generated, full colour human faces. In a subsequent testing period these familiar faces appeared with their natural colour-spectrum (colour-congruent condition) in half of the trials and with the colour spectrum of the other identity (colour-incongruent condition) in the remaining half. All images were filtered to preserve either horizontally-oriented information, vertically-oriented information or a combination of both. Filtered faces were presented together with decreasing levels of grayscale noise in order to obtain the psychometric function of face identification in each participant. We found that the recognition of vertically-filtered but not of horizontally-filtered faces suffers from colour-incongruence resulting in a disruption of identity discrimination, even in the absence of noise. Our results suggest that vertically-oriented information may be instrumental in conveying colour cues to face identity. These findings highlight the importance of considering the colour properties of face stimuli when investigating identity recognition.

The integration of gaze-cues in congenital prosopagnosia for faces and bodies

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Researchers generally share the consensus that faces are processed holistically. It is difficult to understand the impact of this ability until we encounter someone who is not able to recognize familiar faces. Congenital prosopagnosia (CP) refers to the inability to visually recognize faces with no known onset, cause, or other visual deficits. This impairment is hypothesized to be due to a lack of holistic face processing. Recent evidence suggests that bodies are also processed holistically. The question emerges whether the impairment for faces in CP extends to the body. Furthermore, while identity perception research in CP is abundant, studies on gaze perception are sparse. Nonetheless, adequate gaze perception is crucial for everyday communication and is potentially abnormal in CP as a result of poor identity perception. We created a gaze-based composite design for bodies and faces. Both designs were conducted on five CP participants and compared to a matched control group. In Experiment 1, two whole body figures (head and body) were (sequentially) presented, either aligned or spatially misaligned. Participants were instructed to assess the similarity of head orientation, disregarding body orientation. The design and procedure of Experiment 2 were identical to Experiment 1, except that participants were presented with two faces and had to attend the eye orientation, ignoring head orientation. Results indicate an abnormal composite effect for the CP group in comparison to the controls, but only for the face task, not for the body task. Implications for a better understanding of gaze-cue integration in CP are discussed.

Visual perspective taking as investigated by fast periodic visual stimulation

Alexy-Assaf Beck¹, Bruno Rossion¹, & Dana Samson¹

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Presenting visual stimuli at a fast periodic (i.e. fixed) rate leads to high signal-to-noise ratio (SNR) responses in the electroencephalogram (EEG) known as “steady-state visual evoked potentials” (Regan, 1966). This fast periodic visual stimulation (FPVS) approach has been successfully used to explore low-level vision, spatial and selective attention, and more recently face perception. The purpose of this study was to assess the potential of FPVS to explore the processes underpinning our ability to compute what is seen by someone else (level 1 visual perspective taking). We presented widely variable stimuli at a rapid rate of 2.5 images/second (2.5 Hz). All stimuli represented a human avatar (whose identity varied) in a room with an object on one of the walls. The identity and location of the object changed at each stimulation cycle. We presented 4 consecutive stimuli in which both, the participant and the avatar saw the object on the wall, while every 5th image showed a stimulus for which only the participant could see the object. We identified specific brain responses at exactly 2.5 Hz and, 0.5 Hz (2.5 Hz/5). Contrary to the 2.5 Hz response, which merely reflects the synchronization of the visual system to the visual stimulation, the 0.5 Hz response represents a clear visual perspective discrimination response. Overall, these findings open an avenue for understanding the processes underpinning visual perspective taking by providing a sensitive new measure that does not require an overt perspective taking response, extending the FPVS approach to investigate higher levels of cognitive processing.

S17: Symposium

Parenthood: Stress and challenges

Room: MOL 5.01

Sarah Galdiolo^{1,2} & Stéphanie Mazzone¹

¹ *IPSY – Psychological Sciences Research Institute, Université Catholique de Louvain*

Parenthood is considered as one of the most significant life challenges because of its potential to drastically disrupt parents' lives. The current symposium will focus on the influence of children on parents' experiences and will relate stress and challenges relatives to parenthood in clinical and theoretical perspectives. The first presentation will examine the influence of childbirth on parents' attachment development. The second one will address the nature, risk factors and consequences of parental burnout. Next, the relations between parental reactions toward their children's emotions and Theory of Mind (ToM) abilities in children with autism spectrum disorder (ASD) will be highlighted. The last presentation will refer to the separation anxiety in the parent –child relation.

Development of attachment orientations in response to childbirth: a longitudinal dyadic perspective

Sarah Galdiolo¹ & Isabelle Roskam¹

¹*IPSY*

The aim of the current study was to investigate the influence of childbirth on parents' attachment orientations. A three-wave longitudinal research program (during the second trimester of pregnancy, at 6 months postpartum, and at 1 year postpartum) using a multilevel modeling framework and the Actor-Partner Interdependence Model has been conducted on 150 parental couples with parental group, i.e. primiparous (first-time) or multiparous (given birth for a second or more times) parents, as a time-invariant predictor and the partner's attachment development as a time-varying covariate. Results showed that parents' attachment orientations were stable. Moreover, when facing childbirth, mothers and fathers tended to follow the same developmental trajectory, and hence to function in dyad. The discussion underlined the stability of attachment orientations over time and the importance of the dyadic perspective in understanding the childbirth experience.

Conceptualization and measurement of parental burnout

Marie-Emilie Raes¹, Isabelle Roskam¹, & Moïra Mikolajczak¹

¹ *IPSY*

Parental burnout (PB) is a tridimensional syndrome characterized by physical and emotional exhaustion, emotional detachment from children, and loss of parental efficiency. The scarcity of research on parental burnout (less than 10 studies, all conducted in parents of severely ill children) strongly contrasted with the profusion of research on professional burnout (more than 23.000 studies) and with the current popular interest in parental burnout. The aim of our research program was to derive fundamental knowledge on the nature, risk factors and consequences of PB in order to inform clinical practices. The current two studies (N= 350 ; N=2000) aimed to investigate (a) the prevalence of parental burnout in a sample of all-coming parents, (b) the psychometric properties of the Maslach Burnout Inventory (MBI) adapted to parental burnout, and (c) the relationships between parental burnout, professional burnout, and depression. Results showed that PB's prevalence was significant enough to warrant further research. They also showed that PB was a specific syndrome related to- but different from depression and professional burnout. They finally showed that the basic adaptation of the MBI to parents did not work well. Our second adaptation, where the depersonalization factor of the MBI took the form of emotional detachment and automaticity led to much better psychometrical properties.

How are parental reactions to children’s emotions related to theory of mind abilities in children with autism spectrum disorder?

Stéphanie Mazzone¹ & Nathalie Nader-Grosbois¹

¹ IPSY, Chair Baron Frère in specialized education

Our purpose was to examine the relation between parental reactions toward their children’s emotions and Theory of Mind (ToM) abilities in children with autism spectrum disorder (ASD). Based on the model of “Parental Socialization of Emotions”, we explored the extent to which parental supportive and non-supportive reactions toward children’s emotions could be protective or risk factors for ASD children ToM abilities, and how ASD children’s emotional regulation was involved in this relation. Participants included 29 ASD and 29 typically developing (TD) children and their mothers and fathers. Mothers of ASD children reported more “encouragement” and less “minimization” than fathers. Parents of ASD children displayed more “comforting reactions” toward negative emotions. Concerning the relation between parents’ reactions and children’s ToM abilities, no mediation or moderation effect of children’s emotion regulation was found. Several direct links were found but distinct according to the group. These findings suggested that there was little difference between parents’ reactions of TD and ASD children. They provided information about how parental reactions toward children’s emotions were related to ASD children’s ToM abilities. The identification of parental reactions as protective or risk factors should be considered in individualised intervention toward parents having an ASD child.

Interactions between parents' representation and the capacity to calm down the separation anxiety

Daniela Oyarce Cadiz¹

¹*IPSY*

The purpose of this presentation is to highlight the intersubjective aspects of parent - child relationships. We wanted to show how the separation anxiety would be an intersubjective issue that involved both the child's psyche as the parent, so the aspects of parenting. As this is the theory, the methodology will be theoretical-clinical, first we describe the theory and then they will be illustrated by clinical vignettes. These vignettes are from a qualitative research project in which children exhibited different difficulties with separation anxiety. For interviews with parents, we used the "interview to R" of Daniel Stern and a non-structured interview that focused on the child's history and difficulties. The children realized the CAT-A test. Meetings with parents and children were recorded in audio, transcribed and analyzed according to a reading grid after the theoretical aspects. In this work, we described how the child's psyche and their parents interacted within the psychic development that calmed down the separation anxiety. We emphasized the role of the containing function and capacity of symbolization in this process. These functions were supported by the parents' representations of themselves, of their parents and of their children. These representations articulated with the ability to calm down the separation in children. Finally, we highlighted the implications for clinical work of these intersubjective aspects.

S18: Invited Symposium

The emotional, cognitive, and personality mechanisms underlying psychopathy

Room: Conferentiezaal

Organizers: Kasia Uzieblo^{1,2} & Inti Brazil^{3,4}

¹*Thomas More University College, Antwerp, Belgium*

²*Ghent University, Belgium*

³*Donders Institute for Brain, Cognition and Behaviour, the Netherlands*

⁴*Forensic Psychiatric Centre Pompestichting, the Netherlands*

Psychopathy is characterized by interpersonal (e.g., lack of empathy), affective (e.g., fearlessness) and behavioral (e.g., impulsivity) problems. Psychopathic traits appear on a continuum and are continuously distributed among individuals. This implies that psychopathic traits are present in criminal and general populations. Psychopathy is one of the most socially destructive disorders given its robust link with a wide range of negative outcomes, such as criminal and violent behavior, and poor treatment responses. This symposium addresses important questions regarding the underlying mechanisms of psychopathy. First, psychopathic individuals exhibit a reduced recognition of and responsiveness to emotional stimuli, especially when the affective information lies outside the attentional focus. Two presentations explore the neurobiological basis of these emotional-attentional deficits. The third presentation focuses on how psychopathy and narcissism are intertwined, and whether these deviant personality constructs exhibit similar underlying personality mechanisms. The final presentation will focus on the relational mechanisms underlying psychopathy. Implications of these findings for assessment and intervention will be discussed.

Psychopathy at rest

I.A. Brazil^{1,2} & J.D.M. van Dongen³

¹*Donders Institute for Brain, Cognition and Behaviour, the Netherlands*

²*Forensic Psychiatric Centre Pompestichting, the Netherlands*

³*Erasmus University, The Netherlands*

Psychopathy is a severe personality condition that is commonly found in prison populations. Importantly, psychopathic tendencies such as manipulativeness, superficial charm and lack of empathy can also be found in the general community, albeit to a less severe extent, and can be indexed as part of broader psychopathy-related personality dimensions. It has been proposed that psychopathy is linked to global impairments in the recruitment of neurocognitive resources. If so, it can be argued that these impairments should also manifest themselves in baseline brain functioning and that they should covary with psychopathy-related personality dimensions. However, there are no studies to date assessing the quality of information transfer in relation to psychopathic features using methods with a high temporal resolution. We used electroencephalography (EEG) to examine resting-state brain activity in more than 100 non-incarcerated individuals. We assessed the quality of information transfer in different frequency bands, as well as the organization of the flow of information using connectivity measures. In this talk, I will present the results and discuss the potential of using such approaches to advance our understanding of psychopathy in both clinical and non-clinical populations.

Psychopathic traits are associated with empathy indexed by mu suppression

Josanne D. M. van Dongen^{1*}, Inti A. Brazil^{2,3}, & Ingmar H. A. Franken¹

¹ *Institute of Psychology, Erasmus University Rotterdam, Rotterdam*

² *Donders Institute for Brain, Cognition and Behavior, Radboud University Nijmegen*

³ *Pompestichting, the Netherlands*

Psychopathy is associated with a lack of empathic concern for others. Recent studies have demonstrated that empathy for pain in others recruits brain areas involved in affective and motivational processing. Additionally, research points towards the involvement of the somatosensory system (perceptual processing) when we vicariously experience emotional states of others. Studies using electroencephalography (EEG) have demonstrated that mu rhythms index the involvement of somatosensory areas in empathy. Mu rhythms are found to be suppressed when perceiving a social interaction between individuals and during empathy for pain. In this study, we tested 70 healthy, right-handed volunteers (36 males) from the general population to examine whether psychopathic traits are related to less mu suppression when seeing victims of aggression. Psychopathic traits were measured with the Triarchic Psychopathy Measure (TriPM) and the Self-Report Psychopathy scale Short-Form (SRP-SF) and empathy was assessed with the Interpersonal Reactivity Index (IRI). EEG was measured while passively viewing pictures of victims of aggression. A positive relation between empathy and mu suppression was found, showing that empathy can be measured by means of mu suppression. Also, different associations between mu suppression, empathy and different facets of psychopathy were found. The current findings add to a neurobiological understanding of psychopathic personality and behavior that is associated with it, thereby contributing to the development of new neurophysiological based interventions for this personality pathology.

Disentangling psychopathic and narcissistic traits in sex and violent offenders: The role of underlying personality problems

Carlo Garofalo¹ & Stefan Bogaerts¹

¹*Tilburg University, Department of Developmental Psychology*

Psychopathy and narcissism have long been considered to lie on a same continuum, although recent evidence only partially supported their overlap in terms of underlying personality features. Moreover, both constructs are often used in forensic settings to describe similarities and differences between offender subtypes, with relevant implications for treatment planning. In this study, we examined: 1) differences in psychopathy and narcissism levels between sex and non-sex violent offenders; 2) differences in personality problems (adopting the SIPP-model; Verheul et al., 2008); 3) associations between personality problems and both narcissistic and psychopathic traits in both groups of offenders. Self-report measures of psychopathy (Levenson Self Report Psychopathy scale) and narcissism (Dutch Narcissism Scale) were administered – along with the SIPP-short form (Severity Index of Personality Problems) – to 76 male sex offenders and 62 male non-sex violent offenders receiving outpatient treatments at three Dutch forensic centers "Dok". Results revealed that sex offenders showed lower levels of psychopathy and maladaptive narcissism, but higher levels of personality problems, than non-sex violent offenders. Interestingly, some of the differences in personality problems dropped to non-significance after controlling for psychopathy and narcissism. Finally, different patterns of personality problems predicted psychopathic traits and maladaptive narcissisms, and they also differ across groups. These findings will be discussed highlighting possible implications for the conceptualization and treatment of personality pathology in violent offenders.

Relational behaviour in psychopathy

Kasia Uzieblo^{1,2}, Laurence Claes^{3,4}, & Lesley Verhofstadt⁵

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²*Ghent University, Belgium*

³*Faculty of Psychology and Educational Sciences, KU Leuven, Belgium*

⁴*Faculty of Medicine and Health Sciences (CAPRI), University of Antwerp, Antwerp, Belgium*

⁵*Family Lab, Ghent University, Belgium*

Although psychopathic traits have extensively been studied during the past decades, still little is known about their role in social interactions and their potential harmful effect on relationships. The current study aimed to gain a better insight into the dynamics of the intimate relationships maintained by individuals scoring higher on psychopathy. First, we aimed to explore the level of relationship commitment and relationship quality in partners scoring higher on psychopathy measures. Second, we were interested in the level of similarity between the personality profiles within these dyads. Hundred thirty-four heterosexual couples were recruited from the community. Results indicated that psychopathic traits in the female partner predicted lower levels of commitment and relationship satisfaction, and a higher appreciation of partner alternatives. In addition, these females described their relationship as being more conflictual and their partner as being less supportive. Interestingly, the male partners also described their relationship to be conflictual, but they mainly emphasized the absence of depth in their relationship. Finally, psychopathic traits in the female partner predicted the presence of similar traits in their male partner. The present study is the first to shed a light on the underlying dynamics in the intimate relationships of psychopathic individuals.

S19: Symposium

The socio-cultural construction of emotions and well-being: Evidence from research on emotional fit with romantic partners and the broader cultural context

Room: MOL 3.01

Organizers: Alba Jasini¹, Jozefien De Leersnyder¹, & Batja Mesquita¹

Chairs: Alba Jasini¹ & Jozefien De Leersnyder¹

¹ *University of Leuven*

Most emotional experiences are constructed in momentary everyday interactions and social relationships, which are embedded within the broader cultural context (for a review see Boiger & Mesquita, 2012). Yet, little is known on *how* emotional experiences emerge in interactions, get co-constructed between interaction partners and, in turn, shape well-being and the quality of the relationship. In the first two presentations, Erbas, Sels and colleagues present research on emotional experiences in romantic couples, revealing that i) individuals with higher levels of emotion differentiation can identify their partner's emotions more accurately than others, and that ii) emotional interdependence between partners is associated with well-being. In the following two presentations, Jasini, De Leersnyder, and colleagues focus on the correlates of emotional fit to cultural groups, documenting i) the longitudinal associations between minorities' intergroup contact and their emotional experiences, and ii) the positive relation between having cultural-congruent emotions and well-being.

Feeling me, feeling you: the relation between emotion differentiation and empathic accuracy

Yasemin Erbas¹, Laura Sels¹, Eva Ceulemans¹, & Peter Kuppens¹

¹ University of Leuven

Does knowing your own emotions relate to knowing those of others? We argue that our ability to experience and label our own emotions in a differentiated and specific manner is related to the ability to accurately perceive the level of emotions in others. In an experience sampling study among romantic couples, we tested the hypothesis that individuals with higher levels of emotion differentiation are characterized by higher levels of empathic accuracy (i.e., judge others' emotions more accurately). In line with expectations, results showed that individuals who differentiate highly between their negative emotions, are more able to accurately infer how pleasant their partners are feeling across daily life. This finding establishes a link between perceptions of our own and others' emotions, and provides evidence that the skills we use to understand our own emotions are also relevant for understanding how others feel.

Emotional interdependence and well-being in close relationships

Laura Sels¹, Eva Ceulemans¹, Kirsten Bulteel¹, & Peter Kuppens¹

¹ *University of Leuven*

Emotional interdependence—here defined as partners’ emotions being linked to each other across time—is often considered a key characteristic of healthy romantic relationships. But is this actually the case? We conducted an experience-sampling study with 50 couples indicating their feelings 10 times a day for 7 days and modeled emotional interdependence for each couple separately taking a dyadographic approach. The majority of couples (64%) did not demonstrate strong signs of emotional interdependence, and couples that did, showed great inter-dyad differences in their specific patterns. Individuals from emotionally more interdependent couples reported higher individual well-being than individuals from more independent couples in terms of life satisfaction but not depression. Relational well-being was not (relationship satisfaction) or even negatively (empathic concern) related to the degree of emotional interdependence. Especially driving the emotions of the partner (i.e., sender effects) accounted for these associations, opposed to following the emotions of the partner (i.e., receiver effects). Additionally, assessing emotional interdependence for positive and negative emotions separately elucidated that primarily emotional interdependence for positive emotions predicted more self-reported life satisfaction and less empathic concern. These findings highlight the existence of large inter-dyad differences, explore relationships between emotional interdependence and key well-being variables, and demonstrate differential correlates for sending and receiving emotions.

Longitudinal associations between intergroup contact and emotional acculturation in minority youth

Alba Jasini¹, Jozefien De Leersnyder¹, & Batja Mesquita¹

¹ *University of Leuven*

The more immigrant minorities are exposed to the majority culture, the more their emotional patterns shift towards those of majority members - a phenomenon coined *emotional acculturation* (De Leersnyder, Mesquita, & Kim, 2011). To date, emotional acculturation has been investigated as the fit of minorities' emotions to majorities' emotions at one specific point in time. In the current study, we focus on the development of emotional acculturation over time. In a longitudinal study with a large, representative sample of minority youth (N = 503, 39% Moroccan and Turkish backgrounds), we tested the idea of a positive feedback loop between minorities' emotional fit to the majority culture and positive contact with majority members over time; two measurements were one year apart. Emotional fit at each time was calculated by correlating minorities' emotional pattern with the average majority culture pattern in comparable situations. We operationalized 'contact' as: (i) the frequency of contact with majority peers, ii) the frequency of heritage language use with peers (an indirect index of not having contact with majorities), iii) perceived peer disvaluation, and iv) perceived teacher discrimination. Structural equation models confirmed our prediction: Whereas minorities' frequency of heritage language use and negative contact with peers and teachers were associated with less emotional acculturation over time, emotional acculturation predicted more contact with majority peers over time. These findings suggest that less contact or bad-quality contact may lead to less emotional acculturation, and conversely, that emotional acculturation provides minorities with tools to engage in contact with majority peers.

Feeling right is feeling good: Psychological well-being and emotional fit with culture in autonomy- versus relatedness-promoting situations

Jozefien De Leersnyder¹, Heejung Kim², & Batja Mesquita¹

¹*University of Leuven*

²*University of California, Santa Barbara*

The current research tested the idea that it is the cultural fit of emotions, rather than certain emotions per se, that predicts psychological well-being. We reasoned that emotional fit in the domains of life that afford the realization of central cultural mandates would be particularly important to psychological well-being. We tested this hypothesis with samples from three cultural contexts that are known to differ with respect to their main cultural mandates: a European American ($N = 30$), a Korean ($N = 80$), and a Belgian sample ($N = 266$). Cultural fit was measured by comparing an individual's patterns of emotions to the average cultural pattern for the same type of situation on the Emotional Patterns Questionnaire (De Leersnyder, Mesquita, & Kim, 2011). Consistent with our hypothesis, we found evidence for "universality without uniformity": In each sample, psychological well-being was associated with emotional fit in the domain that was key to the cultural mandate. However, cultures varied with regard to the particular domain involved. Psychological well-being was predicted by emotional fit a) in autonomy-promoting situations at work in the U.S., b) in relatedness-promoting situations at home in Korea, and c) in both autonomy-promoting and relatedness-promoting situations in Belgium. These findings show that the experience of culturally appropriate patterns of emotions contributes to psychological well-being. One interpretation is that experiencing appropriate emotions is itself a realization of the cultural mandates.

S20: Symposium

Psychology of respiratory symptoms

Room: MOL 4.01

Organizer: Elke Vlemincx¹

Chair: Thomas Janssens²

¹ *Université Catholique de Louvain*

² *KU Leuven*

Dyspnea is the subjective sensation of breathing discomfort. Dyspnea symptoms are present in a variety of illness states, such as anxiety disorders, functional syndromes and respiratory diseases, and are generally estimated to be present in about 50% of severely ill patients. Recent research investigating the processes underlying the perception of dyspnea highlights the multidimensional character of dyspnea. The present symposium will cover a broad set of dyspnea dimensions ranging from respiratory to clinical aspects of dyspnea. In a first talk breathing regulation in response to dyspnea and dyspnea relief will be discussed. A second talk will address memory biases in reports of dyspnea symptoms in both healthy persons and habitual symptom reporters. A third talk will focus on dyspnea recovery in a clinical sample of fibromyalgia patients with and without comorbid depression. In a fourth talk, the relations between dyspnea, affect, fear-avoidance beliefs and exercise will be discussed.

Catch your breath: sighing in response to dyspnea relief

Elke Vlemincx¹, Ilse Van Diest², & Omer Van den Bergh²

¹ *Institut de recherche en sciences psychologiques,
Université Catholique de Louvain, Belgium*

² *Health Psychology, KU Leuven, Belgium*

Sighs are importantly involved in the regulation of breathing and emotions. Emotionally, sighs facilitate relief; sighs are markers of relief and induce relief. So far, shown associations between sighs and relief are limited to relief of stressors. As sighs are key in breathing regulation, sighs may also play an important role in accompanying symptoms of breathing dysregulation such as dyspnea. Therefore, the present study aimed to investigate sigh rates in response to dyspnea relief. Participants ($N=45$) completed four blocks of 16 trials. Each trial consisted of three phases during which participants were exposed to either no, a mild or a high inspiratory resistance in Phase 1, transitioned to either no or a high inspiratory resistance in Phase 2 and ended with no inspiratory resistance in Phase 3. Participants continuously rated dyspnea intensity. Respiratory time and volume were measured continuously. For each phase, sigh occurrence was determined. Self-reported dyspnea intensity was rated higher during high resistances than during mild resistances than during no resistances. Sigh rates were increased during dyspnea relief, i.e. transitions to no resistance, compared to transitions to high resistances and no transition states. These results suggest that sighs are important markers of dyspnea relief, and therefore may be important regulators of emotion and breathing specifically in disease states in which dyspnea is a commonly reported symptom, such as anxiety disorders, functional syndromes or respiratory disease.

Did it take your breath away? The experimental approach to studying the memories of dyspneic episodes

Marta Walentynowicz¹, Ilse Van Diest¹, Filip Raes², & Omer Van den Bergh¹

¹ *Health Psychology, KU Leuven, Belgium*

² *Learning and Experimental Psychopathology, KU Leuven, Belgium*

Somatic symptoms play a crucial role in the health care system, guiding the behavior and decisions of both patients and medical specialists. In this context, the decisions are based not only on present feelings, but most predominantly on the retrospective evaluations of past experiences. However, both momentary and memory-based symptom ratings are subject to various biases leading to inaccurate (often overestimated) symptom recall. We propose that one of the factors affecting memory processes is related to the amount of focus given to either sensory-perceptual or affective-motivational aspects of the somatic experience. In a series of experimental studies we investigated the accuracy of dyspneic memories (Study 1) and whether it depends on the effects of processing focus (PF) during either encoding (Study 2) or retrieval of information (Study 3). In all studies, the standardized rebreathing protocol was used to induce dyspnea in the controlled, laboratory setting in healthy female participants varying in habitual symptom reporting (HSR). Momentary dyspnea ratings were collected during the laboratory session together with state affect ratings, while the retrospective ratings were given after 2 weeks. The manipulation of sensory and affective PF took place either before the dyspnea induction (Study 2) or before the memory recall (Study 3). Analyses consistently showed the retrospective overestimation of dyspnea ratings. The increase in retrospective ratings compared to the momentary ones was related to the individual differences in HSR and the affective PF during encoding. The results are relevant to understand the mechanisms underlying overreporting of symptoms.

Perception of induced dyspnea in fibromyalgia patients

Maaïke Van Den Houte¹, Katleen Bogaerts¹, Ilse Van Diest¹, Lukas Van Oudenhove², & Omer Van den Bergh¹

¹ *Health Psychology, KU Leuven, Belgium*

² *Clinical and Experimental Medicine, KU Leuven, Belgium*

Previous research suggests that individuals with medically unexplained symptoms and patients with functional syndromes, like fibromyalgia (FM) or chronic fatigue syndrome, have a reduced ability to correctly perceive changes in bodily sensations. This reduced ability is presumably influenced by personality and illness characteristics. The aim of this study was to a) investigate if FM patients have a reduced ability to perceive changes in breathing sensations and b) look at possible moderators of this effect. 37 FM patients went through a breathing trial consisting of a baseline phase (60 seconds of room air), a rebreathing phase (150 seconds of rebreathing causing a gradual build-up of pCO₂ and dyspnea) and a recovery phase (150 seconds of room air). The patients were unaware of this timing. During the rebreathing phase patients breathed in a bag originally filled with 95% O₂ and 5% CO₂. Patients continuously indicated levels of perceived dyspnea. On average, the patients did not recover from rebreathing and still indicated moderate levels of dyspnea at the end of the recovery phase. Surprisingly, FM patients who suffered from comorbid depression recovered well from rebreathing, while FM patients without comorbid depression rated their dyspnea at the end of recovery as “rather strong”. Low somatizing patients recovered better than high somatizing patients. These results suggest that in general FM patients have a low ability to perceive changes in breathing sensations. This ability is however higher in FM patients with comorbid depression and in patients with a lower level of somatization.

Dyspnea ratings of exercise vignettes predict exercise levels

Thomas Janssens¹, Sibylle Petersen², & Omer Van den Bergh¹

¹ *Health Psychology, KU Leuven, Belgium*

² *University of Luxembourg, Luxembourg*

Models of exercise behavior highlight the role of mood and physical symptoms as a key determinant of exercise behavior. However, the perception of breathlessness has only received limited attention as a predictor of exercise behavior. In this study we therefore investigated associations between trait positive (PA) and negative affect (NA), dyspnea fear-avoidance beliefs, perception of dyspnea and self-reported exercise levels. Participants (N=373) completed the Multidimensional Dyspnea Profile (MDP) in response to high-intensity physical activity vignettes (running and stair climbing), and completed measures of dyspnea fear-avoidance, PA, NA, and exercise levels. In both vignettes, dyspnea ratings showed similar associations with PA and NA: NA was associated with dyspnea levels and negative emotional response to dyspnea; whereas PA was associated with positive emotions in response to dyspnea. Fear-avoidance was associated with negative emotional response to dyspnea in both vignettes and dyspnea ratings in stair climbing only. For stair climbing, increased levels of PA and reduced dyspnea were associated with increased exercise levels. Indirect paths were not significant. For running, PA exerted both a direct effect on exercise levels, as well as an indirect effect through positive emotions in response to dyspnea. There were no other significant predictors of exercise levels. Our results confirm the role of NA and fear-avoidance beliefs in predicting physical symptoms, and highlight a potential role of PA and positive emotions in response to dyspnea in predicting exercise participation.

S21: Oral Session

Learning processes

Chair: Tom Verguts (UGent)

Room: SAN 1.3

**Misprediction costs nothing: Contingency learning and
proportional retrieval**

James R. Schmidt¹ & Jan De Houwer¹

¹ Department of Experimental Clinical and Health Psychology, UGhent

We investigate the processes involved in human contingency learning using the colour-word contingency learning paradigm. In the typical task, participants respond to the print colour of neutral words. Each word is frequently presented in one colour and responding is typically faster and more accurate to words presented in their expected colour. In Experiment 1, two words were presented with high frequency in one colour, low infrequency in second colour, and medium frequency in a third colour. A third word was presented with medium frequency in all three colours. In Experiment 2, three words were presented highly frequently in one colour and less frequently in two remaining colours. Thirty once-presented novel word trials were also included. In Experiment 1, we observed better performance for high relative to medium frequency word-colour pairs, and for medium relative to low frequency pairs. Within the medium frequency condition, it did not matter whether the word was predictive of a currently-unpresented colour, or the colour was predictive of a currently-unpresented word. In Experiment 2, responses were nominally faster to low frequency words than to novel words. We conclude that a given word facilitates each potential response proportional to how often they co-occurred. In contrast, there was no evidence for costs associated with violations of high-frequency expectancies. That is, there is no evidence for competition between retrieved responses.

Sessions 15 - 21

Signed reward prediction errors drive declarative learning

Esther De Loof¹, Kate Ergo¹, Lien Naert¹, Clio Janssens¹, Filip Van Opstal^{2,3}, & Tom Verguts¹

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³ *ULB Neurosciences Institute (UNI), Belgium*

Reward prediction errors (RPEs) are thought to drive learning. This has been firmly established in procedural learning paradigms (i.e., classical and operant conditioning). However, empirical evidence on whether RPEs drive declarative learning – a quintessentially human form of learning – remains surprisingly absent. In this study, we used a declarative learning paradigm in which RPEs were coupled to the acquisition of Dutch-Swahili word pairs. The memory performance for these word pairs was subsequently tested in a recognition test, either immediate or after a one-day delay. The results demonstrate a causal effect of signed RPEs on declarative learning, with larger RPEs leading to better recognition on the immediate test and even stronger benefits on the delayed test. In addition, we demonstrate that classic declarative memory mechanisms such as time-on-task fail to explain the recognition performance. In a follow-up EEG study the behavioral results were fully replicated. Furthermore, the signed RPEs showed a significant positive correlation with power in the theta (4-8 Hz) frequency band; this frequency band is known for its influence on memory consolidation. Importantly, these results offer a powerful reinterpretation of the testing effect, with key implications for education.

Metacognitive training: Changing the weight of metacognitive cues

Kobe Desender¹, Filip Van Opstal², & Eva Van den Bussche¹

¹ *Vrije Universiteit Brussel*

² *Université Libre de Bruxelles*

Human cognition is characterized by subjective experiences that go along with our actions. At current, the nature and stability of these experiences remain unclear. In the current report, it is proposed that metacognition is constructed by integrating information from different metacognitive cues. Confirming this prediction, response conflict, reaction time and response repetition were identified as variables affecting metacognitive experience. Trials that were congruent, fast and required the same response as the previous trial were more frequently rated as easy than trials that were incongruent, slow and required a different response as the previous trial. Moreover, it was shown that the construction of metacognition based on these cues is a dynamic, rather than a fixed, process. Using a three day training procedure, it was possible to train participants to rely more on a particular metacognitive cue. The current proposal can easily explain the tight relationship between primary task performance and metacognition, while it naturally allows for dissociations between both. Moreover, the observation that the construction of metacognition can be altered by means of metacognition training might have important practical implications.

Here's a happy ending, nothing is forever: Neural correlates of mindful attention

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Mindfulness has beneficial effects on emotional experience. Mindfulness can be divided into two components: interoception (turning attention to bodily sensations) and mindful attention (observing experiences as transient mental events). Both components lead to improved emotional experience. However, no study has investigated whether the mindful attention improves the beneficial effects of interoceptive awareness on emotional experience. Participants (n=32) were trained in 3 conditions: (a) immersion (control condition), (b) interoception and (c) interoception combined with mindful attention. Participants viewed negatively valenced pictures, while adopting one of the three strategies. After each picture they rated felt valence and arousal. We measured neurological activity by means of fMRI. Participants felt the most negative and aroused in the immersion condition and the least negative and aroused in the mindful attention condition. During picture viewing, amygdala and sensorimotor activation were enhanced in the interoception condition. During arousal rating, ventromedial prefrontal activation increased in the interoception condition and increased further in the mindful attention condition. Mindful attention adds onto the effects of interoception. Not only did subjects indicate feeling less negative and less aroused when adding mindful attention to interoception, ventromedial prefrontal activity was also enhanced and amygdala activity was downregulated.

Notes sessions 15 - 21

Notes sessions 15 - 21

Notes sessions 15 - 21

Poster session

Poster session

12u10-13u30

Emotion & Cognition

Room: Entrance hall

P1 - High intellectual ability in young adults: Behavioral and neurophysiological correlate

Marie Chatelain¹, Clara Vincent¹, Hichem Slama¹, & Cécile Colin¹

¹ *Center for Research in Cognition and Neuroscience, Université Libre de Bruxelles, Brussels, Belgium*

While high intellectual ability (HIA) is very much discussed today, its cognitive and neural correlates have not been extensively studied. Some studies suggest that differences between HIA and control individuals exist, may it be for cognitive variables such as attention and working memory, or for neurophysiological variables, while others show no differences between control and HIA individuals. In this study, we aimed to explore attentional, executive and processing speed variables at a behavioral level, as well as their neurophysiological correlates. To do this, we compared HIA and control young adults on their performance on the WAIS-IV and five sub-tests from the Test of Attentional Performance (TAP), as well as on two CPT-ABX tasks, with different ISI, and a cognitive fatigue task. ERPs were recorded during the CPT-ABX tasks and the cognitive fatigue task. Our preliminary results show a specific profile of results for the HIA group on the WAIS-IV characterized by a better verbal performance and a lower processing speed, which is congruent with other studies. On the TAP, the HIA group, while not differing much from the control group, tends to exhibit less omissions and errors, indicating better cognitive control. Regarding the neurophysiological measures, both groups do not differ much, but the HIA group shows a tendency to lower amplitude ERP activity. This is coherent with increased neural efficiency observed in HIA individuals in the literature. More data is currently being acquired for this study.

P2 - The development of number line estimation: A strategy-based perspective

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With increasing age, children develop from a logarithmic towards a linear number line estimation pattern. This change is usually interpreted as a reflection in the development of the underlying number representation. However, recent findings (e.g., Peeters, Degrande, Ebersbach, Verschaffel, & Luwel, 2015) challenge this assumption by suggesting that strategies might play an important role in children's development towards a linear estimation pattern. The present study tested this assumption by gathering trial-by-trial verbal strategy reports when solving a number line estimation task. Seventy-six third graders, 79 sixth graders, and 63 adults made number line estimations on a 0 to 100 and/or 0 to 1000 number line. Participants were assigned to one of three conditions in which the number of benchmarks on the number line was varied to elicit potential benchmark-based estimation strategies: (a) only the origin and endpoint were indicated (control condition); (b) an extra benchmark at the midpoint (500) was presented (midpoint condition); (c) three additional benchmarks (250, 500, and 750) were specified (quartile condition). Results indicated that, as age increased, participants estimated more accurately overall. Contour analyses (Ashcraft & Moore, 2012) revealed that numbers surrounding the benchmarks at 25, 50, and 75% of the number line were estimated more accurately by fifth graders and adults compared to third graders. Furthermore, verbal reports indicated that, with increasing age, participants not only made more use of the externally presented benchmarks, but also created more refined internal benchmarks. The theoretical and educational implications of these findings will be discussed at the meeting.

P3 - Modifying cognitive control through implicit attention training

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Cognitive control - the ability to overcome automaticity when faced with conflicting response options - is crucial for adaptive behavior. Various studies have shown that cognitive control can be improved through training using instructional protocols. Although effective in improving performance on the trained task, the explicit nature of such methods may compromise the longevity and generalizability of the acquired skills. Cognitive control was trained using an implicit attentional training protocol. An arrow priming task was used on which conflict emerged between prime (e.g., a left pointing arrow) and target (e.g., a right pointing arrow) on 20% of the trials. Two groups were implicitly trained to either direct attention towards (Group 1) or away from (Group 2) a distracting prime on these trials, increasing (Group 1) or decreasing (Group 2) the vulnerability to conflict. Training effects were analyzed on the trained task with and without the attentional manipulation, and on a highly similar task (close transfer) and a more distinct task (far transfer). A smaller impact of the distracting prime on the trained task was found for Group 2, indicating that the attentional manipulation was effective. The effect was maintained on the same task without the attentional manipulation and even persisted one day later. No transfer effects were found on the other tasks.

These results imply that cognitive control can be effectively manipulated through implicit attentional training, although the acquired skill seems limited to the trained task.

P4 - Influence of oxytocin on emotion recognition: A randomized placebo-controlled trial

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The neuropeptide 'oxytocin' (OT) is known to play a pivotal role in a variety of complex social behaviors. It is hypothesized that OT promotes prosocial behavior by enhancing the processing of socially-relevant information from the environment, such as facial expressions and bodily kinematics. As these behaviors are known to be deficient in people with an Autism Spectrum Disorder (ASD), more research is needed to assess OT as a potential therapeutic approach. With the present study, we explored the extent by which OT can enhance the 'reading' of emotional body language as presented in impoverished biological motion point light displays (PLDs). To this end, we adopted a double-blind, randomized placebo-controlled design to assess single-dose effects of intranasal OT administration. Eighty-six neurotypical male participants performed a bodily emotion recognition task before and after a single-dose of intranasal OT. Two experiments were conducted to assess whether the novelty of the presented emotional states contributes to recognition performance, one with identical and the other with novel PLD stimuli pre- and post-OT administration. Single-dose effects of OT administration on emotion recognition were moderate, indicating enhanced recognition of emotional body language when novel emotional stimuli were presented post-OT administration. Yet when identical emotional stimuli were presented at baseline and post-OT administration, results indicated a general learning effect rather than specific enhancements related to the OT administration. Although the effects were moderate, they provide indications that OT might form a promising target for development of novel treatments for patient populations with particular social deficits such as ASD.

P5 - Effects of a visual priming paradigm on categorical speech perception

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Using visual masked priming paradigms to activate phonological representations can facilitate or interfere with written word recognition. However, it remains unclear whether this type of paradigm works across modalities. Indeed, while some have made successful attempts at modulating the recognition of spoken words using visual priming, many studies still haven't been able to achieve that. In the present experiment, we aimed to study the effect of masked visual priming on categorical perception. To do this, we first presented a mask consisting of “#” signs, then the two middle “#” signs were replaced either by a written “de”, “te”, or “%%” during 50ms. A synthetic auditory speech stimulus (/də/ or /tə/) was then presented and the participants had to decide what they had heard. We also manipulated the position of the syllable on a voice-onset time (VOT) continuum, either close or far from the phonological boundary. While we expected facilitation or interference effects, depending on the congruency between the prime and the target stimulus, we did not observe any difference between conditions. However, as expected, we did observe different performance scores depending on the proximity of the sound stimulus relative to the phonological boundary, with stimuli far from the boundary (+/-45 ms VOT) being significantly better identified than stimuli close to the boundary (+/-15 ms VOT).

P6 - Detecting change in real-world scenes

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People tend to be surprisingly poor at detecting changes in visual images of real-life situations. Such change blindness suggests a limitation to the human capacity to encode and compare visual information from one moment to the next, especially in images following a large transient or flicker. We therefore used the natural indoor scenes of the change blindness database by Sareen and colleagues (2015), containing the size and on-screen location information of all changes in the images, within a flicker task paradigm. In this task an original and a modified real-world scene, separated by a grey blank, alternated repeatedly until observers detected the location (left or right side) of the implemented change. The stimuli were either presented upright or inverted. The goal of the study was twofold: (1) using change size and location as predictor of participant performance and (2) identifying the influence of image inversion in change detection. A random intercepts (logistic) regressions analysis for RT and accuracy revealed three significant main effects: (1) image inversion (upside-down worse and slower than normal image presentation), (2) object size (larger objects easier and faster than smaller ones) and (3) location (peripheral changes easier and faster than central ones). Change size and location had a profound impact on search performance. This might relate to the overall saliency of the induced change and the search strategy of the participants. Performance was also influenced by scene inversion, possibly due to a less meaning-driven endogenous search strategy when scenes were presented upside-down.

P7 - Active form of self-objectification

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Self-objectification (SO) of women has been considered as a consequence of recurrent experiments of being objectified by men (i.e., being reduced to a sexual object). Women who are SO tend to passively internalize the third-person perspective and to focus on the observable aspects of their body, which in turn leads to negative consequences (e.g., negative self-esteem, sexual dysfunction). Yet, some authors suggested that SO might have positive consequences such as increasing level of women self-esteem and well-being. In our research, we aimed to investigate the role agency in the relationship between classic SO and its consequences. Precisely, we posited that women who are actively self-objectified show higher level of sexual satisfaction, sexual self-esteem and well-being. First, we conducted a correlational exploratory study ($N = 420$) using an online questionnaire in order to examine the consequences in terms of sexual satisfaction and sexual self-esteem of active SO as compared to passive SO. In Study 2, we manipulated experimentally the two types of SO using vignettes. Study 2 aimed to replicate Study 1's results and to analyse the causality of its. We also measured life satisfaction as a dependent variable. The results of Study 1 indicated negative correlations between passive SO and sexual satisfaction and sexual self-esteem. Confirming our hypothesis, the results showed positive correlations between active SO, sexual satisfaction and sexual self-esteem. We are currently collecting data of Study 2. These two studies advance the literature on SO by underlying the pivotal role played by women agency.

P8 - Schooling-related effects on working memory development

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Whether the development of working memory (WM) is relatively impervious to environmental influences or not is still matter of debate. This study aimed at examining whether school level and associated (e.g., literacy) experiences favor progress in verbal WM.

We compared, in three WM tasks (i.e., a serial order reconstruction task and digit spans forward and backward), children (1) of similar age but different school levels (i.e., beginner readers in first grade born at the end of the year. Pre-readers in 3rdkindergartenborn at the beginning of the next year, namely “young” first graders vs. “old” kindergartners) and (2) of similar school level but different ages (i.e., first graders born at the beginning vs.at the end of the year, i.e., “young” vs. “old” first graders). The young first graders outperformed the age-matched kindergarteners in digit span backward (but not forward) and in memory for serial order. They performed as well as the oldest first graders, except in digit span backward. In addition, literacy abilities (phonemic awareness, word and non-word decoding) were highly correlated with memory performance. After controlling for the effects of age, non-verbal reasoning, and vocabulary, literacy abilities were still significantly correlated with the three memory measures. By contrast, when the effects of literacy, non-verbal reasoning, and vocabulary were controlled for, age was not associated anymore with any of the memory measures. These findings show that progress in verbal WM is influenced by schooling-related experiences and suggest an important relationship between literacy and verbal WM.

P9 - Training figure facilitation and ground suppression in figure/ground segregation

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The process of figure ground segregation allows us to correctly represent object relations in the world that we are observing. Behavioral and neurophysiological findings suggest that the region on the object side of a border is enhanced, while the region on the background side of the same border is suppressed. Here we investigated if these processes can be increased through training, as was recently shown for other suppression principles (Vergeer et al., under revision). A novel stimulus was designed in which a central surface is either perceived as figure or as background, depending on its context. Observers were trained to perceive the surface either as figure or as background, while an oriented grating was presented on the surface and while performing an unrelated size discrimination task. Pre and post training contrast detection thresholds were measured for different orientations on the central surface for training conditions. Observers that trained on the background stimulus showed a significant effect of orientation, where performance decreased for the trained orientation. This effect was only (marginally) significant for the ground stimulus, suggesting that training on ground perception increases the strength of ground suppression. Observers that trained on the figure stimulus did not show significant effects of training. The finding reported here that training can lead to increased ground suppression supports the idea that visual plasticity not only results in performance enhancements, as is generally reported with perceptual paradigms, but also effectuates increased suppression of irrelevant or unattended visual information, as is the case in ground suppression.

P10 - Effect of Ebbinghaus illusion on perceptual and grasping judgements

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The theory of two visual systems assumes that visual perception relies on a ventral pathway extending from the striate cortex to the inferior temporal cortex, whereas visually-guided action relies on a dorsal pathway extending from the striate cortex to the superior parietal cortex. The finding that size-contrast illusions deceive perception but not action has long been taken as supporting the independence of these two pathways. For example, the Ebbinghaus illusion shows that the size of a central circle is perceived as smaller or larger according to the size of surrounding circles. However, it is still unclear whether visually-guided action resists this illusion because of the difficulty to match size judgement and real action in terms of visual and proprioceptive feedback. To overcome this problem, we tested the effect of Ebbinghaus illusion on grasping judgements implying a covert activation of the motor programs involved in grasping. The task required participants to decide whether or not they felt able to grasp the central circle of an Ebbinghaus pattern without moving their hands. As a control, we asked other participants to decide whether or not the central circle was smaller than a previously seen circle used as a reference. In both tasks, participants' performance provides strong evidence that the Ebbinghaus illusion affects both perception and action. These results suggest that common processes underlie the computation of object size irrespective of vision aim (i.e. vision for perception or for action).

P11 - Does an abstract thinking style induced by temporal distance enhance the inclusion of unconventional artworks in the category art?

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Construal level theory (CLT) asserts that psychological distance (e.g. temporal, spatial) is linked to level of mental construal, such that more distal objects will be construed at a higher level, which in turn implies the use of broader categories to classify objects (e.g., Trope & Liberman, 2010). Based on CLT, Schimmel and Förster (2008) examined whether an abstract thinking mode (relative to a concrete thinking mode) increased typicality ratings of unconventional artworks for the category art. In their study, an abstract vs. concrete thinking style was first induced by means of a classic writing task in which participants were asked to think about their life a year from now or tomorrow (temporal distance manipulation). Next, in an unrelated task, participants judged the typicality of 12 artworks (3 unconventional, 3 conventional, and 6 filler items). As predicted, typicality estimates for unconventional artworks were higher after writing about the distant relative to the near future. Thus, participants were more likely to accept unconventional artworks to the category art after they had thought about their distant future, presumably because their level of construal changed. We conducted two highly powered direct replications ($n = 100$ and $n = 200$) of the original study by Schimmel and Förster ($n = 28$). Using the same artworks and procedures, we did not find evidence that typicality estimates for unconventional artworks were higher after writing about the distant relative to the near future.

P12 - Cognitive inhibitory control in children following early childhood music education

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The relation between music training and executive functions has remained inconsistent in previous studies, possibly due to methodological limitations. This study aims to investigate cognitive inhibitory control in children with and without musical training, while carefully considering confounding variables. To assess executive functions, the Simon task was used, measuring reaction times (RTs) and error rates on congruent and incongruent trials. Information on important variables such as the socio-economic status (SES), music pedagogy and the amount of musical training was collected through a parental questionnaire. Furthermore, verbal and non-verbal intelligence were assessed as well. Results showed that the samples were not significantly different on background variables. Analysis of the RTs data on the Simon task revealed a significant group x congruency interaction, such that musically trained children showed a reduced magnitude of the congruency effect (RTs on incongruent trials – RTs on congruent trials) compared to non-musicians. To conclude, music training seems to be associated with enhanced cognitive inhibitory control, using well-matched samples.

P13 - Automatic contribution of long-term knowledge to verbal short-term memory

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The contribution of long-term memory (LTM) knowledge to verbal short-term memory (VSTM) is explained by language-based models assuming fast and automatic interactions between STM and LTM. However, direct evidence for automatic STM-LTM interactions is scant. The purpose of the present study was to test the degree of automaticity of LTM-STM interactions using fast running span procedures minimizing the intervention of strategic processes during verbal STM encoding and maintenance. We assessed the influence of several types of long-term linguistic knowledge (lexicality, lexical frequency, semantic-similarity and imageability) on performance in a running-span procedure in which subjects had to encode and recall auditory lists of unpredictable length, with verbal items being presented at a very fast rate (2.5 items/s). We observed reliable effects of linguistic variables in all conditions: VSTM span was higher for words vs. nonwords ($p < .001$), high vs. low frequency words ($p < .001$), related vs. unrelated words ($p < .001$) and high vs. low imageability words ($p < .001$). These results provide the most direct evidence as so far for a direct and automatic interaction between verbal STM and linguistic knowledge stored in verbal LTM. Importantly, this was also the case for semantic knowledge, disconfirming claims that semantic LTM effects would depend on slower controlled activation processes.

P14 - **The neural basis of visual expertise in different expert groups**

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The neural basis of visual learning in the context of real-world expertise is still unclear, despite extensive research. Different hypotheses have been proposed, including (i) the expertise hypothesis, focusing on the fusiform face area (FFA) as the center of all expertise-related neural changes; (ii) the informativeness hypothesis, predicting that the extent to which a region's sensitivity is altered by expertise depends on its informativeness for the specific domain of expertise; and (iii) the interactive view, predicting widespread changes within and beyond the visual system. To compare domains of expertise for which different brain regions are informative, we included 20 ornithologists (living objects of expertise), 17 mineralogists (experts in nonliving objects) and 20 control participants in an fMRI experiment. Participants were, among others, presented with images of birds and minerals. For ornithologists, multi-voxel pattern analyses showed significantly distinct representations of birds in low level and object-selective visual brain regions, frontal cortex and across the whole brain. Similar, though less pronounced, effects were found for mineralogists in object-selective and prefrontal cortex, indicating top-down influences of expertise. Univariate analyses demonstrated that ornithologists showed significantly increased activation for birds in FFA as well as in 'informative' and 'non-informative' brain regions. By contrast, no significant expertise effects were found for mineralogists in any of the functionally defined regions, showing that in mineralogists the distributed changes are not associated with strong local effects. These results suggest distributed effects of expertise in both expert groups, which is more in line with the interactive view on expertise.

P15 - Exploring the role of the right inferior frontal gyrus in visual perspective taking using transcranial direct current stimulation

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In everyday life, we often need to handle conflicts between our own perspective and someone else's perspective. Handling such conflicts requires the contribution of different areas in the brain. Among the regions of interest, we are focusing in this study on the right inferior frontal gyrus (rIFG). So far it is unclear whether the rIFG is involved in the inhibition of the dominant but irrelevant perspective or whether it is specifically involved in self-perspective inhibition. To disentangle these explanations we used a visual perspective-taking task requiring participants to judge either their own or an avatar's perspective, these perspectives being either the same (consistent perspective condition) or different (inconsistent perspective condition). Participants performed the task under anodal, cathodal or sham transcranial direct current stimulation (tDCS). TDCS is a non-invasive method of brain activity modulation. Specifically, we hypothesized that (1) if the rIFG is involved in inhibiting the dominant but irrelevant perspective, anodal and cathodal stimulation should affect the performance in the inconsistent perspective condition irrespective as to whether the irrelevant perspective is the participants' own perspective or that of the avatar. In contrast, (2) if the rIFG is involved in inhibiting specifically the self-perspective, the anodal and cathodal stimulation should affect the performance only when the self-perspective is the irrelevant perspective. We will present and discuss the results.

P16 - Rumination is associated with a reduced efficiency in cognitive control: an ERP study

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Ruminative negative thought is a characterizing feature of several clinical disorders (e.g., major depressive disorder, insomnia disorder). Emerging evidence suggests that impaired cognitive control processes might underlie ruminative thinking. More specifically, using the AX-Continuous Performance Task (AX-CPT), we found previously that trait rumination was associated with a reduced cognitive control efficiency (i.e., slower reaction times on trials where increased control is required), whereas trait rumination was not associated with a reduced performance (i.e., task accuracy on these trials). In the current ERP experiment, we aimed to further investigate the role of trait rumination on the dynamic interplay of proactive control (i.e., maintenance and updating of task-relevant information) and reactive control (i.e., interference monitoring and resolution) using the AX-CPT. Behaviourally, we found in line with our previous study that trait rumination was associated with slower reaction times on non-target trials (i.e., AY, BX, AY trials). However, trait rumination was not associated with a decreased accuracy on these trials. In contrast to our previous study, trait rumination was in this study also associated with slower reaction times on target trials (i.e., AX-trials). Again, and in line with our previous study, trait rumination was not associated with a reduced accuracy on target trials. The results of the ERP indices for reactive and proactive control are currently being analysed and will be discussed during this presentation.

P17 - Automatic contribution of colour information to face categorization from briefly presented natural images

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Colour's contribution to rapid categorization of natural images is debated. We examine its effect on high-level face categorization responses using fast periodic visual stimulation (FPVS; Rossion et al., 2015, *J Vis*). High-density electroencephalogram (EEG) was recorded during presentation of 50-s sequences of object images every 83 ms, i.e., at $F = 12.0$ Hz. Face images were embedded in the sequence at a fixed interval of $F/9$ (1.33 Hz). There were four conditions: 1) full-colour images; 2) greyscale images; 3) and 4) phase-scrambled images from Conditions 1 and 2, respectively, making faces and objects unrecognizable. Twenty observers responded to fixation-cross colour changes ("colour task"); another 20 to fixation-cross shape changes ("shape task"). We found face-selective responses at 1.33 Hz and its harmonics (2.67 Hz etc.) over occipito-temporal areas, with right-hemisphere dominance; this response was absent for scrambled images. Importantly, in the shape task, the face-categorization response (sum of all-channel-averaged responses at significant harmonics) was 22% stronger with colour than greyscale images ($p = 0.025$), indicating a substantial image-colour advantage, though non-significant in the colour task ($p = 0.94$). Behavioural analysis revealed that observers performing the colour task responded 20 ms slower to colour images ($p = 0.023$), despite hit rates at ceiling ($> 95\%$ correct) in all conditions. However, no such response-time differences were found in the shape task ($p = 0.71$). Thus, the colour advantage for face categorization interacts with behaviour, suggesting that colour, when not a distractor, has an automatic contribution to face categorization in natural images.

P18 - Are atypical viewing patterns in ASD really confined to the eye region? A meta-analysis on feature saliency

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Reduced eye-contact is one of the core symptoms of ASD. Indeed, studies have found that individuals with ASD make fewer fixations at faces, and more specifically at eyes. Moreover, other studies demonstrated that they fixated the mouth and/or the background more often than a control sample. However, the specific nature of the atypical viewing patterns in individuals with ASD remains a matter of debate, since results appear to be strongly dependent on task and stimulus factors. Instead of yet another empirical study evaluating the fixation patterns of individuals with ASD, the field is in need of a systematical and quantitative overview of all the evidence. Therefore, we examined and combined all available empirical data on this topic by means of a quantitative meta-analysis, hereby evaluating the overall evidence for differences in social attention between individuals with and without ASD. Our literature search yielded over 2.500 articles, of which 57 were included in our meta-analysis. Several moderator variables such as participant and stimuli characteristics were incorporated. Hedges' *g* effect sizes were examined. Our results provided evidence for a reduced saliency of faces in individuals with ASD, which was stronger for upper compared to lower face regions. These viewing pattern differences were partially overcome by using task instructions, compared with free-viewing tasks. Overall, this meta-analysis provided evidence for atypical viewing patterns in individuals with ASD, characterized by a reduced saliency of faces and – more specifically – all internal facial features, with moderate to strong effect sizes.

P19 - Self-advantage and attentional control: A computational modelling approach

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There is a growing literature showing that human decision-making is self-biased. For instance, when learning to associate a geometric shape with a personal label, they are faster and more accurate to self-associations than associations made with others (Sui et al., 2012). It remains unclear whether self-biases mediate visual attention. Here we evaluated whether, once self-associations are learnt, the self-relevance subsequently affects attention parameters in a new context. Twenty-four participants were asked to form associations between personal labels referring to different people ('self', 'friend', 'stranger') and colored letters ('red', 'green', 'blue'). Following associative learning, participants were instructed to identify self- or stranger-associated letters in a non-speeded whole/partial report task. We derived different attention parameters using the Theory of Visual attention (Bundesen et al., 1990). In the associative learning task we observed an advantage in RTs for self-related pairs compared to pairs related to another person. In contrast, in the whole/partial report task, no significant differences were observed in perceptual threshold, processing speed, top-down control and visual short-term memory capacity for self- compared to stranger-related letters. However, participants took significantly more time to respond when asked to identify self- compared to stranger-associated letters. The results indicate that visual attention parameters are not modulated by the social salience of the stimuli.

P20 - Impact of blindness onset on the resting connectivity profile of the occipital cortex.

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How the age of blindness onset impacts on the connectivity profile of occipital regions remains poorly investigated. A resting state fMRI session was acquired in Early blind (EB), late blind (LB) and their matched controls. We investigated the FC between occipital regions and the rest of the brain using a bootstrap Analysis of Stable Clusters to subdivide the brain into meaningful functional parcels. We found increased intra-occipital FC, and between occipital areas and frontal, middle, and inferior temporal gyrus in the EB compared with their control group. We also observed a decrease in FC between occipital areas and the somato-motor regions and the superior temporal gyrus. In striking contrast, the LB showed an increase in the FC between the occipital areas and somato-motor areas (unlike the EB) and no reduction of connectivity between occipital and temporal regions. Moreover, the LB group did not show an increase of intra-occipital connectivity. However, similar to the EB group, LB showed an increase of FC between occipital and inferior frontal regions. When directly comparing the EB with LB, we found stronger intra-occipital FC in the EB, and stronger FC with the postcentral gyrus in the LB. These results demonstrate that the onset of visual deprivation has a major impact on the resting connectivity profile of the occipital cortex with some connectivity changes independent of the period of visual deprivation (e.g. occipito-frontal FC) whereas others varying in opposite direction depending of the period of deprivation (e.g. occipito-S1 FC).

P21 - Does non-symbolic comparison reflects numerical processing or inhibition? Results from a training study with tDCS

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Evidence has shown that the acuity of the Approximate Number System (ANS) is related to mathematical competences (e.g. Fazio et al., 2014). These findings have led researchers to suggest that the ANS plays a critical role in mathematics learning. The most popular task to examine ANS acuity is a non-symbolic comparison task (i.e. deciding which of two dot arrays contains more). However, Gilmore et al. (2013) have suggested that the performance on this task reflects inhibitory skills which are necessary to ignore non-numerical cues to successfully perform the task. To dissociate between both hypotheses, we trained 36 adults during three consecutive days on a non-symbolic comparison task while stimulating their brains with transcranial direct current stimulation over 1) the right posterior parietal cortex (PPC), a key brain area for magnitude processing; 2) the right dorsolateral prefrontal cortex (PFC), a key brain area for inhibition skills. A third group received sham stimulation. Non-symbolic and symbolic comparison tasks, two experimental inhibition tasks, and a calculation test were assessed pre- and post to this training. The current results indicate that stimulation was effective as a function of stimulation, with significant improvement in performance during the earlier stage of training with PFC stimulation, but not PPC. The relationship between these results, numerical processing, and inhibition are discussed with regards to their impact on education.

P22 - Influences of unconscious priming on voluntary actions: Role of the rostral cingulate zone

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The ability to make voluntary, free choices is fundamental to what it means to be human. A key brain region that is involved in free choices is the rostral cingulate zone (RCZ), which is part of the medial frontal cortex. Previous research has shown that activity in this brain region can be modulated by bottom-up information while making free choices. The current study extends those findings, and shows, for the first time, that activation in the RCZ can also be modulated by subliminal information. We used a subliminal response priming paradigm to bias free and cued choices. Primes were little arrows pointing left, right or both ways (in the neutral condition). Using this paradigm we obtained fMRI data for 31 participants. The data were analyzed using whole brain univariate analysis and a region of interest analysis. We observed more activation in the RCZ when participants made a choice that went against the prime's suggestion, compared to when they chose according to the prime. We further found that subliminal information also modulated activity in the anterior insula and the supramarginal gyrus. This shows that the RCZ plays an important role in overcoming externally-triggered conflict between different response options, even when the stimuli triggering this conflict are not consciously perceived. Our results suggest that an important mechanism of endogenous action in the RCZ may therefore involve exerting an internally-generated action choice against conflicting influences, such as external sensory evidence.

P23 - Impact of learning method on cortical representation for words in beginning readers

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Reading, an essential prerequisite to academic achievement, is a complex skill acquired after formal instruction, and a variety of learning methods are still used at school. The phonic method (conversion of letters into sounds) insures a more robust word representation (Perfetti, 1991; Share & Stanovich, 1995) than the global one (visual memorization of whole words), but little is known about their cortical impact in children. One adults' training study with artificial script (Yoncheva et al., 2012) revealed that phonic learning, and not global learning, induced the left hemispheric lateralization thought to reflect connections between posterior visual and anterior language regions (Maurer & McCandliss, 2007). We tested 34 children in grade 1 both behaviorally and with EEG using Fast Periodic Visual Stimulation. Oddball items are inserted periodically in fast streams of base stimuli. This approach recently revealed that words are discriminated from pseudowords in the left VOT in adults (Lochy et al., 2015). In the present study, base stimuli (at 6Hz) consisted of pseudofont, and oddball stimuli (every five items) were either words learned globally at school (logographs), matched unknown words, or pseudowords. In 120 seconds of stimulation per condition, a clear left-lateralized discrimination response appears at 1.2Hz and harmonics for words and pseudo-words, while a bilateral response appears for logographs. Discussion: These results suggest that learning to read by a global approach at an early stage involves specific neural representation, as the right hemisphere is involved in holistic processing and object recognition. Therefore, it might impede the quality of word representation in young children, as left hemisphere specialization is the signature of expert reading.

P24 - Factors contributing to the attractiveness of neatly organized compositions

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Neatly organized compositions seem to have an attractive power on a lot of people. The popularity of images collected on blogs like “Things Organized Neatly” clearly underlines that statement. This project aims to investigate what aspects – of the spectators or of the images themselves – contribute to people experiencing them as aesthetically pleasing. More concretely, it will be assessed which stimulus dimensions as well as which individual differences play a role in the aesthetic preference for specific organized images. As this will be the first psychological study with this type of stimuli, a literature review as well as an exploratory qualitative investigation were conducted to develop a non-exhaustive list of characteristics possibly involved in the liking of these images. Stimulus aspects that could play a role include, amongst others, qualitative differences but also complexity differences regarding variation in colour, configuration, and texture; type (i.e., same or different) and number of objects; origin (i.e., natural or non-natural) and part-whole congruence. Furthermore, also conceptual aspects (e.g., whether or not the separate objects in the composition belong together) could be involved. An important individual difference that will be taken into account is the personal need for structure, also related to different Big Five traits (e.g., conscientiousness). The qualitative investigation gives rise to intriguing research questions, of which a subset will be tested in an online study with carefully selected stimuli. Characteristics (or combinations of characteristics) consistently related to aesthetic liking might then be tested in more carefully controlled experimental studies with parametrically varied stimuli.

P25 - **The effect of tDCS on task relevant and irrelevant perceptual learning of complex objects**

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During perceptual learning the visual representations in the brain are altered, but the causal role of these changes has not yet been fully characterized. Here we investigated the effect of tDCS targeted at the lateral occipital (LO) cortex on task-relevant and task-irrelevant learning of complex objects. Participants completed three training sessions and one test session on separate days. They were trained in two tasks: object naming in a backward masking paradigm, and orientation judgment of a red line. Visual input was equated as much as possible between the tasks: an object and an oriented red line were presented in each trial in both tasks. The only crucial difference between the tasks was the relevance of the stimuli: the object was relevant for the object naming task, while the oriented red line but not the object was relevant for the orientation judgment task. During training, half of the participants received anodal tDCS stimulation. In the test session, participants were tested on their ability to name the trained objects, the irrelevant objects presented during the orientation judgment task, and a new set of objects they were not exposed to during training. Participants stimulated with anodal tDCS during training showed a larger improvement of performance for the trained objects compared to participants in the sham condition. No learning effect was found for the irrelevant or the new objects. This study suggests that LO plays a causal role in relevant object learning, but more research on the neural specificity of this effect is needed.

P26 - Creative process and mood changes: A study with pre-teenage children

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Numerous empirical studies have focused on how to optimize individuals' creative performance. Mood is often viewed as a mean to increase creative performance. However, the beneficial effects of the creative process on mood remain understudied. The present study attempts to fill this gap. The study has been conducted on 24 10-to-12-year-old children. The objectives were to investigate the influence of the creative process (divergent and convergent thinking) on positive mood. In addition, we also explored the relation between creative performance and positive mood. Two groups were compared. First, children from the experimental group participated in two sessions during which they completed divergent and convergent thinking tasks (graphic and verbal). Second, children in the control group completed similar activities that did not involve creative processes. Before and after the two sessions, children in both groups completed self-report measures of mood. Results revealed no significant effect of the involvement in creative process on positive mood. Nevertheless, positive correlations were found between creative performance in verbal convergent task and changes in positive mood. No significant correlations were found for creative performance in graphic convergent task nor in divergent task. We discuss the potential educational and developmental implications of the use of the creative process among children. We then conclude by formulating new hypotheses to be tested in future research.

P27 - The role of attachment anxiety in parent's attentional processing of their child's face: An eye tracking study

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Although prior research has shown a link between a child's attachment representations and attentional processing of their mothers it is currently unclear whether mother's attentional processing is related with child's attachment style, and attachment anxiety in particular. In the current study we use a promising paradigm to investigate whether differences in maternal attention is associated with differences in child's attachment representations. Moreover, we investigate whether this hypothesized relation varies among different child's emotional expressions. In the study consisting of two parts, 29 mothers participated with their child (48.3% girls; ages 9 to 14 years, $M = 10.93$, $SD = 1.67$). In the first part, photographs of the mother's child and unfamiliar children, showing neutral facial expressions, were displayed to the mother. In the second part, mothers were shown photographs of their child and unfamiliar children, showing different emotional facial expressions (scared, happy, and sad). During both tasks, eye movements of the mothers were recorded. Results showed that child's representation of attachment anxiety was related to more maintained attention of the mother on the child's neutral face, in comparison to unfamiliar children's neutral faces. Further, child's representation of attachment security was related to reduced maintained attention of the mother on the child's neutral face, in comparison to unfamiliar children's neutral faces. Furthermore, a significant three-way interaction effect indicated that specifically in anxiously attached children, a prolonged attention for the mothers was found for negative emotional expressions of their own child, compared to positive emotional expressions. These findings confirm that mothers of securely attached children are less attentive to the child when there is no threat while the opposite is true for mothers of more

Poster session

anxiously attached children. These differences in attentional processing are important as they may affect the autonomy development of a child.

P28 - Semisupervised category learning enhances the development of automaticity

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In human category learning, learning is studied in a supervised, an unsupervised or a semisupervised way. The scarce human semisupervised category learning studies all focus on early learning. However, the impact of semisupervised category learning late in learning, when automaticity develops, is unknown. Here, the results of the first study on the evolution of reaction time during semisupervised learning are reported. In Experiment 1, participants (N=34) were trained on the information-integration category structure for two days. Afterwards, half of the participants learned in a supervised way; the other half in a semisupervised way during two succeeding days. Both groups received an equal amount of feedback trials. Finally, all participants took part in a test day where they were asked to respond as quickly as possible. The mean reaction times in the semisupervised group were significantly faster than in the supervised group. This difference was not found on day 2, implying that the no-feedback trials in the semisupervised condition facilitated automaticity. Experiment 2 (N=38) was designed to test whether the higher amount of trials in the semisupervised condition caused the faster reaction times. Therefore we replicated the Experiment 1, with the same amount of trials as in the semisupervised condition of Experiment, but now varying the percentage of feedback trials between almost always (95%) or rare (5%). An ANOVA showed that receiving feedback almost always or almost never led to comparable reaction times as the supervised condition of Experiment 1. This confirms the advantage of semisupervised learning late in learning.

P29 - The influence of spatial frequency on scene perception in adults

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All images contain information at multiple spatial scales, from coarse, Low Spatial Frequency (LSF) to fine, High Spatial Frequency (HSF) information. Previous research suggested that both coarse and fine information are flexibly used at different stages of processing during scene recognition in daily life (Oliva & Schyns, 1997). In the current study we tried to extend and generalize these findings by presenting nonsocial, real-life scenes, either as a normal picture or solely defined by LSF or HSF information. In a second experiment we also used hybrid images, which consisted of overlaid LSF and HSF information from these scenes. These were used as a prime stimulus, modulating the detection of a subsequently presented normal target picture. The participant had to identify this target stimulus, which was either from the same or a different category as the prime stimulus, as rapidly and correctly as possible. Our results indicated that prime-target congruency was a good general predictor of participant performance, but this effect was modulated by spatial scale and prime duration. More precisely, coarse spatial information (LSF) was more effective with shorter prime presentation times and fine spatial information (HSF) required a longer prime presentation to influence participant performance. These findings were in line with the Reverse Hierarchy Theory (RHT) of visual perception: LSF information is transmitted faster than HSF (coarse-to-fine processing) and gist is determined more by LSF information than by HSF.

P30 - Oversatiation negatively affects evaluation of goal-relevant (but not goal-irrelevant) advertised brands

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According to the goal pursuit theory, when a goal is activated, objects in the environment that can fulfill the goal are more positively evaluated. For example, when people are thirsty, they evaluate more positively the objects in their environment that can quench their thirst, in comparison to people who are not thirsty. Little is known, however, about consequences that an over-fulfilled goal can have on goal-relevant stimuli. We suggested that an over-satiation state (by eating or drinking too much) is associated with more negative attitudes towards exposed advertised brands of an over-consumed product. We ran three studies in which we measured or induced over-satiation by asking participants to drink too much quantity of water, and asked them to evaluate advertised brands (of water and other irrelevant brands). Results showed that an over-satiation state negatively affected evaluations, buying intentions, and estimates of future purchases of advertised water brands. Importantly, this negative effect was specific to the advertised brands of the over-consumed product; the over-satiation did not affect evaluation of irrelevant advertised brands. These findings contribute to the literature on context effects of advertising in general, and extend previous research on evaluation of goal-relevant objects. Practical implications of these findings are also discussed.

P31 - Predicting arithmetic with the processing of order sequences of digits, letters and months

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The efficiency of ordering digits has been shown to be highly related to arithmetic. However, the underlying mechanisms in the different conditions during order judgements are still unclear. Therefore, the current study aimed to examine how distance and direction are processed in ordered sequences and to study the extent to which the relation between arithmetic and order processing is specific for digits. In the first experiment, participants performed an order judgement task and had to indicate whether a sequence of three digits was presented in the correct order. In the second experiment, participants conducted order judgements of digits, letters and months. In the order judgement tasks, ascending, descending and non-order trials were presented. Additionally, half of the trials for each direction were close triplets, the other half were far triplets. Results showed a reversed distance effect for ordered trials of digits, letters and months. In addition, ascending trials elicited faster performance compared to descending trials and the reversed distance effect was stronger in ascending than descending trials. With regard to non-ordered trials a standard distance effect was found. Arithmetic was related to order performance in all tasks. The results suggest that different mechanisms can play a role depending on the characteristics of the triplet that is presented. Furthermore, the results suggest that the relation between arithmetic and order is domain-general.

P32 - Short- and long-term priming effects of brand logos

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Since Vicary (1957) claimed that moviegoers could be primed subliminally with 'buy popcorn' and 'drink coca cola', subliminal priming has become an intriguing phenomenon. Most of these experiments are conducted in an experimental context where tasks like deciding whether a given number is smaller or larger than five are used. This is not very representative for daily contexts. That is why the aim of this study is to first of all determine the short- and long-term priming effects of more real life, but clearly visible stimuli. In order to do so, we conducted a typical priming paradigm (N=37) with highly familiar brand logos as primes. The targets consisted of letter strings and participants had to perform a speeded lexical decision task on them. Although the primes were presented for a short duration (i.e., XXX ms), they were clearly visible to all participants. To observe the short- and long- term priming effects, the Stimulus-Onset Asynchrony (SOA) between prime and target was manipulated. The results show that a visible brand logo can prime its own name and words strongly related to it. These priming effects did not significantly interact with SOA. However, the observed priming effect was small (9ms). These findings indicate that shortly presented, yet clearly visible, real-life information can have short- and longer-term effects on subsequent behavior. A follow-up study will determine whether this is also the case for real-life information that is presented below the consciousness threshold.

P33 - When emotion is nowhere to be found: Effects of alexithymia on affect recognition and metacognition

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Traditionally Alexithymia was described as an inability to identify and describe emotions in the self. Further research on this topic has shown that there are similarities between alexithymia and the broader concept of mentalization. Mentalization is the ability to understand the mental states of the self and others that underlie overt behavior. According to this definition it can be stated that mentalization includes the ability to understand one's own emotions, which is difficult for people high in alexithymia. However, mentalization goes much further, as it also includes the ability to recognize emotions within others and the ability to understand one's own functioning (= metacognition). This study will examine whether alexithymia indeed affects other aspects of mentalization. Alexithymia was measured by means of the 'Bermond-Vorst Alexithymia Questionnaire' (BVAQ) and the 'Levels of Emotional Awareness Scale' (LEAS). The BVAQ is a self-report questionnaire, measuring both cognitive and affective alexithymia. The LEAS is a performance measure that assesses the participants' emotional awareness. Afterwards, participants completed the 'affect matching' task and the 'reading the mind in the eyes' task. A 'person matching task' was used as a control for the affect matching task. Finally the metacognition of each subject was tested by asking them after each trial how sure they were of their given answer. This question was presented on a continuous scale ranging from very insecure to very secure. Results and discussion will be presented during the poster presentation.

P34 - Effects of intranasal oxytocin on social, cognitive and emotional variables in healthy subjects: A meta-analysis with systematic review of evidences. Contribution of prosocial, social salience and approach-avoidance theories

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Oxytocin has been discovered in 1906 by the neuroscientist Henry Dale. Since then many studies have tried to elucidate its roles and actions in the human body. While a major part of the literature paints a rather idealistic picture, researchers have taken very polarized positions concerning the nature of its effects on human. OT literature is characterized by contradictions and limits. In light with the wide range of reactions caused by this hormone, authors tried to highlight an underlying mechanism that could explain multifarious effects of OT. With the purpose of clarifying the results of a wide range of studies in this fast-growing field, this thesis presents 4 meta-analysis. First, a general meta-analysis was done including all the collected data. Then, 3 meta-analyses were performed: prosocial theory, social salience theory and finally, approach-avoidance theory. The results of the meta-analysis highlight a significant small to moderate size effect of OT on humans with a mean principal effect size of 0.419 ($p < 0.001$). The three theory-specific meta-analyses have also not proven to be more conclusive: the social salience theory shows the higher effect size: 0.438 ($p < 0.001$); the prosocial theory shows a mean effect size of 0.309 ($p < 0.001$); the approach-avoidance theory shows a mean effect size of 0.264 ($p < 0.001$). The results of the present meta-analysis confirmed a statistically significant overall effect of OT on social, cognitive and emotional variables in healthy subjects. However, this overall effect appeared to be very limited with a small to moderate effect.

**P35 - Executive functioning in autism spectrum disorder:
Charting heterogeneity and delineating subgroups**

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Numerous studies have shown impairments in executive functioning (EF) in individuals with autism spectrum disorder (ASD) compared to typically developing (TD) controls. However, the often large inter-individual variability suggests that these impairments are not universal for ASD. We aim to chart the heterogeneity of EF within our ASD sample and investigate whether we can delineate more homogeneous subgroups with a similar EF profile. Finally, we want to investigate whether these different subgroups are also characterized by differences in ASD symptomatology. Nine tasks and one questionnaire were administered from 58 individuals with ASD and 58 TD controls (8-to-18 years), to measure five EF domains. ASD symptomatology was measured with the Social Responsiveness Scale and the Repetitive Behavior Scale – Revised. Multiple case series analyses showed that none of the EF impairments were present in all individuals with ASD, with large inter-individual differences in the type and number of EF domains that were impaired. Interestingly, 19% of the individuals showed no impairments on any of the EF tasks and 38% even performed better than controls on at least one task. Cluster-analyses, revealed three ASD subgroups with a different, more homogeneous EF profile. We are currently investigating whether the different clusters differ on ASD symptoms. Our findings provide a more nuanced picture concerning EF impairments in ASD and indicate the importance of determine an individual profile of both strengths and weaknesses. Defining different EF profiles could be relevant for clinical practice, as each subgroup may benefit from a different treatment.

Work and Organizational Psychology

Room: Entrance hall

P36 - Personality as a cue: How employee neuroticism moderates the relationship between leader neuroticism and abusive supervision

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In the present article, we rely on trait activation theory (Tett & Burnett, 2003) to argue that neurotic leaders are likely to be more abusive to their employees in situations where neurotic cues are present. In Study 1, we found that behavioral manifestations of employee Neuroticism, as a contextual factor, moderate the relationship between leader Neuroticism and abusive supervision directed at this employee. Study 2 revealed the same interactive effect, but now with employee's neurotic personality moderating the relationship between leader Neuroticism and abusive supervision. Study 2 also provided proof for an indirect relationship between leader Neuroticism and antisocial employee behavior via abusive supervision. More specifically, we found that abusive supervision mediates this indirect relationship when employee Neuroticism is high as opposed to low. These findings reveal important theoretical implications by providing first evidence that Neuroticism is a relevant bad personality trait for leaders, and indicating that leader (and employee) personality should not solely be studied in itself, but also as a function of the social relationships in which it is imbedded. Furthermore, organizations are advised not to consider the personality of their (future) employees separately, but rather as part of a relational network.

P37 - Influence of perceived discrimination on women's work motivation

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Nowadays, despite anti-discrimination policies, women suffer frequently from a lack of consideration from their male colleagues, altering their well-being and motivation to work. More precisely, perceived personal or group discrimination could have a distinct influence on work motivation. Previous studies showed that the impact on women varies in function of the type of perceived discrimination (Bourguignon et al., 2006). Based on the self-categorization and the social identity theory, work motivation is differently structured as if employees categorized themselves as individuals or as part of a group. As a result, a different impact from personal and group discrimination on work motivation is expected. Moreover, it has been proved that typical men behaviour is heavily associated with competence compared to women behavior (Marchand, Saint-Charles, & Corbeil, 2007). Therefore, it is hypothesized that women with more masculine traits will suffer from less perceived discrimination, and work motivation. An online survey was created in order to collect data over work motivation, perceived personal and group discrimination. The respondents were also questioned on typical men and women behaviour to determine their gender-conformity. To test our hypotheses, data were collected from 57 women stemming from the labour force, aged from 21 to 63 years old. Results indicate that perceived personal discrimination was negatively related to work motivation and that perceived group discrimination was negatively correlated with masculine behaviour. Thereby, our study enhances the importance of work environment, and especially discrimination, on work motivation. This research also corroborates the self-categorization and the social identity theory framework to study these issues.

P38 - The emotional support at work: Conceptualization and influence on burnout and organizational commitment

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The increasing demands of work and their impact on the employees' quality of life are timely. In this perspective, the reflection on the managerial practices deserves to be thorough. In this perspective, nurses are particularly faced with emotional and significant emotional dissonance which may cause dissatisfaction eventually burnout (Dal Santo, Pohl, & Battistelli, 2013). The objective of this research is to conceptualize, measure and predict the influence of emotional support at work (ESW) by studying the impact of psychological tensions (conflict work / family life and family life / work), labour characteristics (physical constraints, complexity of work ...) and emotional strain on burnout, organizational commitment, job satisfaction, and organizational citizenship behaviours. The moderating effect of emotional support at work as well as emotional regulation strategies will be analysed. The hospital raises an exemplary manner the dynamics and challenges of local management. We will consider three cases: the University Hospital of Bab El Oued (Algeria), the University Hospital of Brugmann (Belgium), and the University Hospital of Bordeaux (France), this will highlight the impact of organizational culture on (ESW) influence. For that, we mobilize two methods: qualitative and quantitative (more about a double measure of perceived ESW from the health managers and members of the healthcare team and a measure of emotional regulation strategies). Strong organizational practices issues seem important in helping caregivers to develop their relational consciousness and support them in this development knowing that the quality of interpersonal relations is a variable on which the organization has some control and can be used as levers mitigating the negative effect of psychological stress and burnout thus promoting organizational commitment and organizational citizenship behaviour. This research contributes to the understanding of the influence of emotional support at work and demonstrates the leverage effect of (ESW) on Burnout.

P39 - Coping and quality of life in Flemish justice assistants

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Justice assistants fulfil an important role in the reintegration process of criminal offenders. On a daily basis, they are the link between the offender and the judicial institutions, welfare, mental health and social organizations. Justice assistants work in 4 areas: probation, victim support, electronic surveillance, and mediation. Given the fact that working with offenders and the sometimes unpredictable judicial system can be demanding and stressful, it can be assumed that it affects the justice assistant's quality of life. Complaints about stress and burnout are regularly heard. However, no research has investigated the quality of life of Flemish justice assistance. Using a quantitative web-based survey, this study aimed to map the quality of life of justice assistants, and to investigate whether the quality of life is related to coping skills. The sample consisted of 210 Flemish justice assistants (28 males, 182 females). The online survey consisted of 2 questionnaires: the Coping Inventory for Stressful Situations (CISS; Endler & Parker, 2004) to measure coping skills, and the World Health Organization Quality of Life BREF questionnaire (WHO QOL BREF; 1996) that measures quality of life in four domains: physical health, social relationships, environment and mental wellbeing. Preliminary results indicate that 67% of respondents assess their quality of life as 'rather well', while 19% thinks it is 'very well'. With regard to coping, the Flemish justice assistants show significant lower scores on task-oriented and avoidant coping, compared to the norm group of active adults. Also, female respondents show significantly higher levels of emotion-oriented coping skills. Emotion-oriented coping showed to have a significant negative impact on all quality of life domains.

P40 - To shape your own job: Job crafting behavior in Flemish employees

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Job crafting is a fairly recent concept within work and organizational psychology defined as the adaptations in tasks and social relations of an employee in order to adapt his work to his own needs and competencies. This definition is based on the Job Demands-Resources Model that was developed by Demerouti, Bakker, Nachreiner and Schaufeli in 2001 to explain burn-out in employees. The current study explored whether Flemish employees use job crafting in their profession. The Job Crafting Scale (JCS) (Tims, Bakker & Derks, 2011) was administered to 158 participants (38% males) who were employed in a diverse range of work settings. The JCS assesses (1) social job resources, (2) structural job resources, (3) challenging job demands, and (4) hindering job demands. Results indicate that 83,6% of the participants increase mostly their structural job resources. Only 17% is seeking to enhance the social job resources. Less than half of the participants (40,9%) develop their challenging job demands, but 98,7% does not try to diminish their hindering job demands. Gender, age or type of work had no influence on the different dimensions of the Job Crafting Scale. Research should further explore the relation between job crafting and well-being in employees.

Forensic psychology

Room: Foyer

P41 - Neuropsychology and psychopathy: Study on a sample of Belgian forensic patients

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Studies investigating the neuropsychological functions showed no strong deficit correlated with the psychopathic personality disorder (Hare, 1984). However, one study (Pham et al, 2003) among a population of inmates highlights that psychopathic individuals made more mistakes at the D2 test and the Stroop Test. This results supporting the hypothesis of a deficit of selective attention and behavior inhibition. Our study includes 25 forensic patients from the secure hospital Les Marronniers (Tournai). The mean age is 46.38 years ($\sigma = 9.65$). All patients were evaluated at the Psychopathy Checklist-Revised (PCL-R, Hare, 2003). We administered the Tower of London, the Modified Card Sorting Test, the Stroop, the D2 and the Trail Making Test, in order to assess executive and attentional functions. We performed nonparametric correlations between the PCL-R factors and the scores at the neuropsychological tests. No significant correlation was found between the PCL-R factor scores and the scores at the Modified Card Sorting Test, the Trail Making Test and D2 tests. However, we found significant correlations between the number of errors on the Stroop Test and Antisocial behavior factor of PCL-R, particularly with the impulsive and parasitic lifestyle. Another correlation was found between the Interpersonal facet and the total time at the Tower of London test. These results are congruent with the literature among antisocial individuals (Morgan & Lilienfeld, 2000; Pham et al, 2003). The results will be discussed on the light of international literature on psychopathy.

P42 - Exploring the dehumanizing dimension of prison environment and its impact on prisoners' coping strategies

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The dehumanizing nature of prison seems obvious in the collective imagination and is often depicted in literary or cinematographic works. However, to the best of our knowledge, no empirical study has so far addressed this issue, even though dehumanization has been a topic of great interest in social psychology in recent years. According to this field of research, dehumanization is a form of discrimination in which the individual is deprived of characteristics perceived across all human cultures as separating humans from animals (animalistic dehumanization) or automatons (mechanistic dehumanization; Haslam, 2006). In this study, we investigate possible antecedents and consequences of inmates' perception of being dehumanized. First, we propose that the inmate's perception of being dehumanized might be influenced by three types of factors: 1) Organizational factors related to inmates' perception of being supported by the prison institution 2) Contextual factors related to conditions of detention and 3) Individual factors related to inmate's identification with their peer group. Second, we examine the impact of experiences of dehumanization on strategies used by inmates to deal with their situation (coping strategies). We hypothesize that inmates' perceptions of being dehumanized will increase the use of negative coping strategies (such as denial) and decrease the use of positive coping strategies (such as focusing their efforts to solve their situation). To test these assumptions, 150 inmates from six Wallonian prisons were surveyed using paper questionnaires. Variables of interest were measured using validated Likert scales. Results suggest that: 1) Perception of being supported by the prison institution and identification to the group of inmates, but not the physical conditions of detention, impact the prisoners' perception of being dehumanized, 2) Perception of being dehumanized has an impact on coping strategies used by the prisoners 3) Perception of being dehumanized mediates the effect of perceived support and identification to the group on coping strategies. Implications will be discussed.

P43 - The impact of parental reaction on the teenager's awareness of the seriousness of the sexual offense they perpetrated

Audrey Baierlin¹, Zoé Patry¹, Céline Wertz¹, & Adélaïde Blavier¹

¹University of Liege

In 2004, statistics showed that one out of four sexual offenders was a minor. Hence, the S.O.S. Family team's intervention intends to provide the appropriate guidance and support to the involved teenagers (victims and offenders) alongside their family. Our research focused on the correlation between parental reaction to their minor's committed sexual offenses and the awareness of the gravity of the latter's acts himself. Accordingly, we gathered our information from the S.O.S. Family team's data base applying 20 real-life cases on our observation grid. Despite our small sample, we found a significant association between parental denial or overprotection reaction and the teen's unfamiliarity with his act's gravity. As a matter of facts, no relationship was established when it comes to other forms of parental reactions (minimal recognition, rejection, aggression, anger or dramatization). Parental reaction is a vital aspect in the acknowledgment and development of the adolescent's offensive sexual acts. In general, the parental backlash -of any kind -is not significantly related to the young's awareness of his actions intensity. However, this work also reveals interesting information regarding the young sexual offender's individual characteristics. Last but not least, this study provides some helpful tips and clues for a clinical intervention focused on both the young suspect and his parents.

P44 - Heboidophrenia: the hazardous interplay of psychosis and psychopathy

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The diagnostic entity of heboidophrenia has been consigned to oblivion despite its clinical, prognostic, criminogenic value. At the core of this diagnosis lies specific interactions between psychosis and psychopathy. The diagnosis was first coined by Kalhbaum in 1890, was revived by Anglo-Saxon literature in the first half of the 20th century, and by French psychiatrists in the late 90'. We integrated literary sources, clinical experience and an own pilot study as a stepping-stone for a more in-depth research. Cases (n=20) were selected out of samples of Mentally Disordered Offenders in Belgian Medium and High Risk Forensic Facilities. Files, records and therapist's experiences were quantitatively analysed iteratively to cull subtypes from each other. We here present preliminary qualitative results, more in-depth qualitative and quantitative results will be produced. The diagnosis subsumes more than a mere DSM-IV-TR Axis I & II comorbidity, it can be seen from a developmental perspective, or from a structural perspective. Both vantage points suggest an interplay between the (paranoid) psychotic process and the antisocial behaviour, where both trigger and induce each other. At this point, we found evidence for three subtypes modes of interplay; 1) mood instability patterns induced either psychopathic or psychotic phenotypic presentation, 2) according to personality organization and its defensive functioning (were psychopathy defends against psychosis), and 3) phenotypic expression of both components (psychopathy and psychosis) linearly co-dependent. Despite its incremental value, little is known about the therapeutic prospects of this diagnosis. Current results indicate that these patients do question competency to answer for their deeds in a peculiar manner, relapse more often, reoffend more often, do evade treatment opportunities (if they have any), act out more often (in both antisocial and psychotic ways), induce a particular negative counter-transference in psychiatric teams, etc. Because of these particularities and

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their versatile phenotype presentation, heboidophrenia patients cannot simply be assimilated to the “high risk & high care” population, but need special supervision and clinical insight. In this research, we aim(ed) at discerning semiologic signs in order to support the diagnostic process.

P45 - Intimate partner violence: Perseverance vs dropout from treatment programs targeting male batterers

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The Dropout phenomenon has been studied extensively in general psychotherapy and in more specific domains. Therapeutic programs for male batterers across Europe, United States or Canada also have their share of problems in their attempts to maintain users in treatment. The purpose of this study is to identify potential intrapsychic variables associated with dropout and completion of this kind of treatment. Fifty-one male offenders enrolled in a group treatment for domestic violence took part in the study (23 who abandoned and 28 who completed). Before the start of therapy, they were surveyed using questionnaires and structured clinical interview to collect sociodemographic data and to assess specific psychological variables, namely emotional distress (BDI), impulsive behavior (BIS-11), early relationship with their parents (PBI), life events (LEDS) and alexithymia (TAS-20), the inability to experience and express subjective emotions. Correlational analysis showed that age, paternal parenting behaviors and the number of significant events reported in the past six months are the only variables correlated with treatment dropout. The younger the participants, the most likely they were to dropout of the group therapy. Moreover, men who completed treatment reported fewer difficulties in their life and less autonomy support by their father than men who prematurely terminated their therapy. The present findings pose a serious challenge for all actors involved in specific treatment programs. Indeed, if all individuals who committed violent acts have the same intrapsychic variables, how do we predict, especially retain and motivate, the users likely to dropout?

P46 - When the child reveals a sexual abuse: The real-life experience of the couple, its functions and the consequences

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This research explores difficulties experienced by the conjugal and parental couple when a sexual abuse is revealed by their child. The couple's experience is an area that deserves more investigation because we know how much parental distress influences the child. Our sample is constituted by 6 couples who have lived this disclosure. A qualitative design was implemented: we met couples once or twice. During these meetings, we gather information on abuse characteristics and we run an interview. We also administered 6 questionnaires: Life Events and Difficulties Schedule, Dyadic Adjustment Scale, Dyadic Coping Inventory, Parental Alliance Inventory, Parenting Sense of Competence Scale and Sexual Desire Inventory. Results highlight a distress in all couples. This one is expressed in different manner inside couples and between couples. However, for each of them, parenthood seems to be a resource that allows to invest the victimized child. This investment is a focalisation on the child that has for consequence a disappearance of the couple's conjugality that could lead to break up. If some couples manifest stronger links, they still are focused on the child. This research shows that if parents often try, at first, to assure homeostasis and familial security, these mechanisms aren't adequate at long term. We see a risk to create a family secret or an overprotection fixing the child in its victim's role. Thus, it seems important to support conjugality. However, other studies on bigger sample are needed to qualify difficulties experienced in order to identify risk and protective factors.

P47 - Parenting and incarceration: is parenting a desistance factor?

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Incarceration leads to a break between an individual and one's social environment, inducing significant losses of identity (Touraut, 2014). Tough delinquent identity remains prominent, during their incarceration, some inmates invest their role of father. Investing in his role of father and thus his father's identity allows the inmate to break away with delinquent's identity (Tripp, 2009; Walker, 2009). Moreover, research on desistance underlines that turning point like job, marriage or parenthood supports the transition from criminal life to conventional life (Laub et Sampson, 2003; Lebel, Burnett, Maruna, & Bushway, 2008). Indeed, becoming a parent is a stage in life cycle that can shape one's lifestyle. From qualitative researches conducted with father inmates since at least 6 months, we have identified the link between investment in parenting and desistance. The hypothesis is that investment in parenting has a positive impact on father's prison experience, parenting sense of competence and that it will support desistance process. A semi-structured interview and several questionnaires assessing relational and social life have been used in this context (WHOQOL-brief, EPS, ESUL, educational attitudes, QAECEP). First results highlight that parenting during incarceration can be difficult. Some inmates try to keep it with visits between inmate fathers and their children. These visits are influenced by different factors and have a positive impact on prison experience. Indeed, with these visits, inmates maintain a link with their children. That is a source of support and hope during incarceration. That allows investment in one father's identity.

P48 - **'She's not staying with this guy, is she?' Public attitudes towards partners of child sex offenders**

Onesha Oliver¹, Tine Vertommen¹, Sofie Van Hooydonck¹, & Kasia Uzieblo^{1,2}

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²*Ghent University*

While attitudes towards sex offenders have received some attention in the literature, insights into the wellbeing of sex offenders' intimate partners are scarce. Previous research shows that women whose partner committed a sex offence, experience stigma. They say their environment blames them for what their partner did, and report social isolation. This study aims to explore public attitudes towards child sexual abuse perpetrators and their intimate partners. An online survey was developed, consisting of three questionnaires, and a social desirability scale. The Jackson Incest Blame Scale (Staley & Lapidus, 1997) assesses what or whom people in generally blame in case of child sexual abuse, and the Imhoff scale (2015) measured punitive attitudes against pedophiles. An ad hoc developed questionnaire described three scenarios of child sexual abuse, each describing four different possible reactions of the sex offender's partner. Participants were recruited from the general population (preliminary sample, $N=166$) through social media. Preliminary results indicate that respondents consistently blame offenders the most. Nevertheless, society, the situation, and even the offender's partner and the victim are –albeit to a lesser extent- blamed as well in case of child sexual abuse. Respondents consider ignoring the offence an inappropriate partner's reaction in all three scenarios, whereas asking their partner to seek for help is considered the most appropriate in the child abuse material scenario. Respondents' reactions towards the partner are very diverse and depending on the offence type, including some bystander behavior. Data collection is still ongoing, further analysis of the data will be presented during the conference.

Clinical Psychology

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P49 - Association between depressive symptoms and parental stress in new mothers: What's the role of negative partner support?

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² *Université Catholique de Louvain, Faculté de Psychologie et des Sciences de l'Education*

We already know that the first year after the birth of a first child is a sensitive time for new parents, marked by numerous psychological vulnerabilities. Furthermore, there are some results showing depressive symptoms could be associated with parental stress of new mothers. In this context, we're interested in the role of paternal support and, more precisely, the role of negative paternal support. We proofed the role of negative paternal support as a mediator or a moderator between depressive symptoms and parental stress in new mothers in a sample of 40 mothers of a first child aged between 2 and 12 months. Maternal depressive symptoms and parenting stress as well as the negative partner support are significantly intercorrelated. Furthermore, our results indicate a significant mediator role of the variable of the negative partner support between maternal depressive symptoms and parenting stress. On the other hand, we found no significant moderator effect of negative partner support between depressive symptoms and parental stress in new mothers. Results refer to an important role of negative paternal support as a mediating variable in the relationship between maternal depression symptoms and parental stress. Therefore, the inclusion of the father in the mother-baby dyad during the transition to parenthood should receive more attention in future through research and therapy.

P50 - Honesty-humility: predicting real-world dishonesty with narrow traits

Yolandi-E Janse van Rensburg¹, Prof. Dr. Eva Derous¹, & Dr. Francois De Kock²

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There is a dire need to understand the psychological mechanisms that drive dishonesty as all levels of society suffer from the cost of dishonest behavior. “Honesty-Humility” (the sixth dimension of the HEXACO-Personality Inventory), shows concurrent validity in predicting dishonesty. We investigate how the sub-scales of Honesty-Humility predict the complex, multi-faceted construct, dishonesty, operationalized as self-reported academic counterproductive academic behavior and real-world cheating. University students (N = 308) aged between 18 and 47 (M = 22.9; SD = 5.23) completed online self-report tests. We elicited cheating behavior by creating boundary conditions conducive for cheating. An objective standardized cheating task was administered. We explored within-individual differences by following a non-experimental research design. Recent findings on the benchmarks of correlational effect size have shown that, for results involving attitude-behavior, correlations ranging between $r = .1$ and $r = .25$ may indicate medium effect size in applied psychology. Our results are in line with other findings in that the facet, fairness, significantly relates to self-report counterproductive academic behavior. More importantly, we found greed avoidance the greatest predictor of real-world cheating, in comparison to other facets of Honesty-Humility. The classic bandwidth – fidelity dilemma refers to choosing to measure either a single, narrowly defined variable or exploring various separate variables. Broad traits are good predictors of broad criteria, but narrow traits better predict more fine-grained criteria. Assessing criteria at the facet-level shows to be more efficient in predicting cheating behavior.

P51 - **Abnormal bodily experiences in schizophrenia: A phenomenological study**

Elisa Lancellotti¹ & Jérôme Englebert¹

¹ULG

Our study focuses on Abnormal Bodily Experiences [ABE] in people with schizophrenia. We have created a specific questionnaire for this study – based on the study of Stanghellini et al. (2012) and the third dimension of the EASEscale (body experiences) (Parnas et al. 2005). Our research follows an analytical method called “empirical-phenomenological”. Our population is made up of 50 schizophrenic subjects. The average age of subjects was 37 years. There are no exclusion criteria regarding gender or control sample. Analyses are qualitative. We observed that ABE are very present symptoms in people with schizophrenia. Indeed, in our sample, only one patient was asymptomatic. We also observed that all categories and subcategories were present in our sample. These results should help to refine and clarify the diagnosis of schizophrenia and open up significant opportunities for psychotherapeutic dimension.

P52 - A comparison of mean discrimination and member identification in children with and without autism spectrum disorder

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Typically developing (TD) individuals are able to deduce the mean size of a set of dots, even when the sizes of the individual dots are not recalled or stored in memory. This phenomenon, often referred to as ensemble encoding, most likely constitutes a viable algorithm in driving gist perception. Recently, researchers studying enhanced local and decreased global visual processing in ASD have started to explore ensemble perception. The current study is the first to investigate ensemble perception in children with ASD by administering a pair of tasks pioneered by Ariely (2001), evaluating both member-identification (“Was this item a member of the set?”) and mean-discrimination (“Was this item larger or smaller than the mean size of the set?”). The degree of stimulus variability was manipulated to test its expected influence on task performance and to increase measurement sensitivity. No main differences in performance were found between the ASD and TD group on both tasks. However, performance of the TD group was affected more by the degree of stimulus variability in the set, compared to performance of the ASD group. In the TD group, a higher degree of stimulus variability was associated with a decreased performance on both tasks. Ensemble encoding, proven to be a feasible algorithm in TD individuals, seems to be present in children with ASD as well. However, ASD children are less sensitive to the influence of stimulus variability, which might be attributed to a higher precision in processing bottom-up information.

P53 - A phenomenological approach of anorexia nervosa

Eugénie Minguet¹, Jérôme Englebert¹, Adam Helinski¹, & Adélaïde Blavier¹

¹University of Liège (Belgium)

From a phenomenological perspective, anorexic female patients seem to experience difficulties regarding the subjective feeling of their own body (embodiment) and their personal identity, which lead to an intersubjectivity impairment within social interactions. Following these findings, this study investigates the “body-for-others” concept (Sartre, 1943) and altruistic hypotheses from the ethologist Albert Demaret (1973) in a sample of anorexic female patients. Two main hypotheses are tested: anorexic patients are expected to define themselves mostly through the gaze of others and as more altruistic than control participants. This study included 67 anorexic female patients (based on the DSM-IV criteria) and 246 control female participants. Three self-reported questionnaires were used: the Eating Disorder Inventory: EDI-II of Garner (French version), the Identity and Eating Disorders questionnaire: IDEA of Stanghellini (French version translated and adapted by us) to assess the “body-for-others” concept and 17 complementary items for the altruistic dimension. Mann-Whitney non-parametric tests were used to compare the two groups. Results show that anorexic patients obtain higher scores than the control group for the three questionnaires ($p < 0,001$ for all measurements). The IDEA questionnaire enriches the knowledge relative to the body-self relationship and the first-person perspective, which is essential for a phenomenological approach. Furthermore, the promising results concerning the altruistic dimension in anorexia nervosa should be evaluated in future research. Nevertheless, a better validity of the items assessing the altruistic dimension is needed.

P54 - Impacts of therapist directiveness on drop-out

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Patient's level of satisfaction during the first session of psychotherapy determines drop-out (Roos & Werbart, 2013). How can therapists influence this satisfaction? Do their behaviors have an impact? The interpersonal approach could be useful to answer this clinical question because the circumplex model, based on the two main interpersonal dimensions (agency and communion), conceptualizes how behaviors will impact an interlocutor (Sadler, Ethier, & Woody, 2011). Therefore, our specific research question was: what are the therapist's interpersonal behaviors that positively influence patient's satisfaction? To answer this question, participants were first instructed to imagine being patients who interacted with standardized therapists behaving according to different interpersonal profiles. Then, they had to watch some video clips depicting the interaction between the therapist and the client. Finally, they had to evaluate their perception of working alliance with the WAI – French short-form (Corbière, Bisson, Lauzon, & Ricard, 2006) and their intention of continuing the therapy. The results indicated that, in line with the literature on the efficacy of the therapeutic relationship (Farber & Doolin, 2011), during a first therapy session, warmth was preferred in every case. More surprisingly, the results indicated that assertive patients were more satisfied with the dominant behaviors of the therapist than the submissive ones. Taking the interpersonal perspective provides answers to how therapists' behaviors potentially contribute to early drop-out from therapy. Implications for research and clinical practice are drawn. Our future research will evaluate how impression formation (Fiske & Neuberg, 1990) works in therapeutic relationship.

P55 - Identity processes and statuses in patients with eating disorders

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Identity development represents a core issue in patients with an eating disorder (ED). Although several theorists have underscored the harmful impact of identity related difficulties in ED, in-depth research remains scarce. Using a recently developed identity model that allows for capturing commitment and exploration processes and identifying identity statuses or types (representing combinations of these processes), the present study aimed at investigating personal identity in ED and its psychosocial associations. A total of 123 female patients with ED (aged 11-57) and age-matched community controls reported on identity as well as several clinical outcome variables that commonly co-occur with ED (anxiety, depressive symptoms, borderline symptoms, non-suicidal self-injury [NSSI], and need satisfaction). First, patients with ED scored lower on committing to and identifying with identity-related choices and scored higher on ruminative or maladaptive exploration when compared to controls. Second, with respect to identity statuses, patients with ED experienced less identity synthesis, more identity confusion, and a certain degree of identity disorder when compared to controls. Finally, in patients with ED, the identity disorder status was associated with the highest scores on anxiety, depression, borderline symptoms, and NSSI, and with the lowest scores on need satisfaction. This study indicates that patients with ED experience more identity problems than their age-mates, but considerable variability in

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identity statuses were observed among patients as well. In addition, patients who simultaneously suffer from an identity disorder experience the most problematic psychosocial development.

P56 - **Aberrant dynamical connectivity in Autism Spectrum Disorders**

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Neuroimaging studies investigating functional connectivity have revealed that autism spectrum disorders (ASD) are characterized by aberrant functional connectivity. However, the directionality of these aberrant connections remains largely unknown and under-investigated. With a novel combination of advanced neuroimaging data analysis methods, we aim to understand the directionality of these aberrant functional connections. First, we used functional connectivity density mapping (FCD), a whole-brain data-driven method, to identify local and global differences in functional connectivity density between resting-state fMRI data of an ASD and a TD control group. Then we used partially conditioned Granger causality analysis to investigate the directionality of those connections that showed group differences in functional connectivity density. With this method, a reliable estimate of group differences in directed connectivity was obtained. Local and global functional connectivity density mappings reveal clusters with more dense short-range local and global connections in four subcortical and five frontal regions in the ASD group, as compared to the TD group. Granger causality indicates that both the incoming and the outgoing information flow is increased in ASD in 7 of these 9 regions. However, in the right caudate and the left inferior frontal gyrus (two regions known to be involved in ASD), the incoming information flow is higher than the outgoing flow in ASD, while this pattern is reversed in the TD group. With a novel combination of advanced neuroimaging data analysis methods, we investigated differences in dynamical functional connectivity and in the directionality of information flow between children with ASD and TD controls. For the right caudate and the left inferior frontal gyrus (relevant for respectively sensorimotor control and language processing), we found that children with ASD show more incoming and less outgoing functional

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connections than TD controls. Accordingly, this may indicate that information from these two regions is less transferred to control other regions in a top-down manner, which may relate to deficits in sensorimotor control and language processing in ASD. We conclude that this pattern of inverted effective connectivity in right caudate and left inferior frontal gyrus in ASD may explain some of the inconsistencies in the literature, and that this novel finding provides important insights in the neurobiological origin of ASD.

Relational psychology

Room: Foyer

P57 - Maternal sense of competence in a precarious context

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The exercise of parenthood is threatened by the precarious context in which families live. Precariousness is defined as the lack or the absence of basic securities, such as housing, employment and emotional security. In such a context, parent's emotional availability can be reduced, so that the quality of parent-child interactions decreases and child development is impacted. Therefore, policies of prevention and intervention have been developed in order to overcome parental difficulties in early childhood. However, little is known about the parenting sense of competence of vulnerable parents, and its interaction with perceived social support. We investigated parenting sense of competence in a sample of 38 adult mothers raising their children alone in a precarious context. Subjects completed the French versions of the "Parenting Sense of Competence Scale" and the "Social Provisions Scale". Results indicate that, in average, mothers report a high parenting sense of competence, characterized by a high level of self-efficacy and an average level of satisfaction. Mothers also report low perceived social support. A significant negative correlate was found between self-efficacy and the need to feel useful, while the satisfaction dimension is positively correlated with almost all the dimensions of perceived social support. In conclusion, mothers raising their children alone in a precarious context report high levels of parenting sense of competence. However, withdrawal and isolation are associated with poorer parental satisfaction. This suggests that the social dimension of precariousness is a significant aspect to consider in parenting support policies.

P58 - Parents and adolescents on the evolution of parenting in adolescence

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L. Goossens¹, P. Bijttebier¹, & K. Van Leeuwen¹

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Parenting is a multidimensional concept that may evolve with adolescent development. However, little is known about the structural validity of parenting dimensions throughout adolescence. Therefore this study examines (a) the longitudinal invariance of five established parenting dimensions, and (b) patterns of (dis)continuity of these parenting dimensions, taking into account the perspectives of mothers, fathers, and adolescents. In a four-wave accelerated longitudinal study questionnaires are used to investigate a five-dimension parenting model. The dimensions are: support, proactive control, punitive control, harsh punitive control, and psychological control. These dimensions were already established in previous research (Janssens et al., 2014). The study included perspectives of adolescents on parenting across parents, whereas parents reported on their own respective parenting practices (Wave 1: N adolescents= 1,111; Age: M= 13.79, Range= [11.38; 17.02]). Measurement invariance was studied by means of multi-group SEM in MPlus showing that the parenting dimensions are (partial) scalar invariant across informants and across adolescence. This allows us to describe patterns of (dis)continuity of the five-dimension model of parenting. Growth modelling indicates similar patterns for mothers, fathers, and adolescents. This study is important for future research on parenting as an environmental factor related to adolescent development, because it shows empirical evidence for structural and longitudinal measurement invariance. A strength of the study is that the inclusion of three informants provides information on possible differences in perspectives on parenting in adolescence.

Social Psychology

Room: Foyer

P59 - The role of perceived public's expectations in the transmission of stereotype consistent information by journalists

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Scientific evidence suggests rather strongly that the media usually portray ethnic minorities and their members in stereotype consistent ways, thereby contributing to the transmission and maintenance of social stereotypes (e.g., van Dijk, 1988, 1991). One typical example is the mentioning of the North African origin of a criminal when journalists report on a theft, an information consistent with a social stereotype prevailing in Belgian society (van San, 2004). One explanation for this could be that journalists think, rightly or wrongly, that this kind of information meets the public's expectations. To our knowledge, no previous study has examined the merit of this explanation. To address this limitation, we designed a study aimed at understanding the role played by perceived public's expectations in journalists' writing process and how these perceptions affect the way journalists mention the ethnicity or the nationality of criminals in news articles. To these ends, we conducted reconstruction interviews (Reich & Barnoy, 2016) with French-speaking Belgian journalists. Participants were asked to recreate aloud one of their crime news articles written less than one month before the interview and to describe the different factors they took into account during the writing process. We are currently processing the data through a qualitative thematic analysis. Preliminary results attest to the usefulness of reconstruction interviews in investigating the indirect role that the public plays in the transmission of stereotype consistent information by the media. Results will be discussed in terms of the multifaceted nature of journalists' production practices.

P60 - **Automatic Imitation: A Meta-Analysis**

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Over the past 15 years, a large number of studies have shown that individuals have a tendency to imitate the movements they observe. Interestingly, it has been suggested that these automatic imitative tendencies are an indicator of social cognition because they reflect shared representations for action observation and action execution. Indeed, research has indicated that automatic imitation is reduced for non-biological compared with biological agents. Furthermore, it has been argued that automatic imitation is related to individual differences in empathy and that automatic imitation is disturbed in autism spectrum disorder. However, the evidence for these moderators has not yet been evaluated extensively. Therefore, the goal of the current meta-analysis was to provide a systematic evaluation of the different moderators of automatic imitation. In our poster, we will present preliminary results on a subset of these moderators based on more than 180 published and unpublished experiments. More specifically, we will show that (a) automatic imitation cannot be explained by spatial compatibility, that (b) imitative tendencies are stronger for human than for non-human agents, that (c) there is currently no evidence for either hypo- or hyperimitation in autism spectrum disorder, and that (d) there is no meaningful association between empathic traits and imitative tendencies. Although these results provide support for the social nature of automatic imitation, they also show that the evidence for this idea is not as strong as previously assumed. In particular, our results question the hypothesis that individual differences in social cognition are reflected in automatic imitation.

P61 - Intonation trumps perspective-taking during sarcasm detection

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Understanding sarcasm involves mental-state attribution skills but might also depend on cues such as prosody. What remains unclear is whether these cues merely facilitate a complex perspective-taking process or whether they lead to an ironic interpretation without mental-state processing. Seventy-six participants were administered a Sarcasm Detection task. In this task, they read events about a character (context). They then heard an ambiguous message left by the character to a friend (target statement) and had to judge whether the character's friend will perceive the message as sarcastic. Three conditions included target sentences with a neutral intonation: literal (L), sarcastic egocentric (SE), and sarcastic allocentric (SA). Two other conditions included sarcastic egocentric or allocentric messages with a sarcastic intonation (SEI and SAI, respectively). In egocentric conditions, the participant had privileged contextual information that suggested a sarcastic interpretation only from his perspective. Results indicated more accurate performance in L, SAI, and SEI conditions than in SA and SE (all $p < .05$). Analyses on reaction times (RTs) showed faster RTs in L, SAI and SEI than in SA, faster RTs in SEI than in SE (all $p > .05$) and a tendency for faster RTs in SAI than in SE ($p = 0.07$). When individuals judge someone else's sarcasm understanding in presence of both contextual and prosodic cues, they focus only on intonation. Since perspective-taking is time consuming, using the cue in shared perspective (prosody) is an efficient strategy to make an accurate judgment with the least processing effort.

P62 - Does sleep deprivation alter level-1 and -2 visual perspective-taking abilities?

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6 School of Psychology, University of Birmingham, Edgbaston, UK

Inferring what someone can see or not (level-1 visual perspective-taking, VPT) and how someone sees it (level-2 VPT) is a crucial ability for successful social interactions. Long regarded as a static trait-like characteristic, recent studies indicate that it can be modulated by transient factors inherent to the task and the testing settings but also by factors inherent to the subject such as mood. We investigate here the impact of sleep deprivation on VPT. Participants performed both a level-1 and level-2 VPT tasks at 9:00, in a within-subject randomized design after a regular night of sleep versus total sleep deprivation. Performance was altered after sleep deprivation in both tasks. Moreover, in level-1 VPT task, the Sleep x Congruency interaction indicated that sleep deprivation alters perspective *Selection* but not perspective *Computation*. By contrast, in the level-2 VPT task, this interaction was non-significant. Our results support the hypothesis that VPT abilities are partially state-dependent, by showing for the first time their modulation by sleep deprivation. More specifically, this study shows that level-1 perspective *Computation* is unaffected by sleep loss whereas the

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Selection of the relevant over the irrelevant perspective becomes harder to deal with after sleep deprivation. In other words, in situations where two perspectives are coactivated, individuals will be more influenced by the irrelevant one when they are sleep-deprived. The absence of such effect in level-2 leads to two opposing assumptions difficult to disentangle: sleep deprivation does not affect level-2 perspective *Computation* and *Selection* or alters both processes.

P63 - Perceived animacy in TD participants: a chasing task

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The current study explored the strength of implicit social inferences using a chasing paradigm, similar to Gao and colleagues (2009), in which subjects judged the absence or presence of a chase within a display of seemingly random moving dots. Previous research thereby suggested that chasing subtlety was an important predictor of participant performance. We intended to replicate this finding and to determine whether a stronger perception of animacy forms a necessary prerequisite to improve detection performance. We implemented three different task conditions. The first, baseline, condition assessed the influence of chasing subtlety on participant performance using a four-dot display of seemingly random moving shapes. In the second, social, condition, eyes were added to these shapes. The eyes of the chasing dot were always focused on the chased target in the chase-present trials. In the last, frequency, condition, the contrast of the shapes was manipulated periodically.

An explorative random intercepts logistic regressions analysis indicated three main findings: (1) a main effect of chasing subtlety ($Z = -26.01$; $p < .001$), (2) a main effect of the social manipulation ($Z = 8.85$; $p < .001$) and (3) a main effect of frequency ($Z = 2.62$; $p = .01$). These findings confirmed chasing subtlety to be an important predictor of participant performance in a chasing paradigm. This performance further improved when either a social or a non-social cue was added to the display. This indicated that perceived animacy is not a necessary prerequisite to influence chase detection accuracy.

P64 - Influence of perceived group threat on group perspective taking

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Individuals have been shown to become more egocentric in a visual perspective taking task when they judge the perspective of a group of people. There are two possible interpretations of such results. First, the mechanisms which usually foster rapid and involuntary computation of what other people see might not be able to cope with multiple agents presented simultaneously. Secondly, research showed that perspective taking is influenced by the emotions of the observer and since groups are typically perceived as more threatening than individuals, it is possible that it is this resulting emotion that influenced perspective taking. The current experiment aimed at disentangling these interpretations. Participants were presented with a group of four avatars that all displayed either threatening, welcoming/happy or neutral emotions. During the task, participants were asked to judge the number of discs that either they could see or the number of discs that could be seen from the group's perspective. On half of the trials both participants and the group of avatars saw the same amount of discs while on the other half of the trials they did not. If perceived group threat is at the origin of the increase in egocentricity, than such egocentric tendencies should gradually reduce from the most threatening to the most welcoming group conditions. If however, the increase of egocentricity is due to the saturation of perspective taking mechanisms, then the level of egocentricity should be unaffected by the perceived group threat. Results will be presented and discussed in relation to these predictions.

P65 - Failed replication of oxytocin effects on trust: The envelope task case

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The neurohormone Oxytocin (OT) has been one of the most studied peptides in behavioral sciences over the past two decades. Many studies have suggested that OT could increase trusting behaviors. A previous study, based on the “Envelope Task” paradigm, where trust is assessed by the degree of openness of an envelope containing participant’s confidential information, showed that OT increases trusting behavior and reported one of the most powerful effects of OT on a behavioral variable. In this paper we present two failed replications of this effect, despite sufficient power to replicate the original large effect. The non-significant results of these two failed replications clearly exclude a large effect of OT on trust in this paradigm but are compatible with either a null effect of OT on trust, or a small effect, undetectable with small sample size (N= 95 and 61 in Study 1 and 2, respectively). Taken together, our results question the purported size of OT’s effect on trust and emphasize the need for replications.

**P66 - Competence and Warmth as predictors
of risk taking**

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This exploratory study is part of a research project that aims to understand risk-taking in general and cyber-risk taking in particular. Cybercriminality is an important issue in our society (Douzet & Héon, 2013). In this study, we have apprehended risk-taking with the Stereotype Content Model (SCM) developed by Fiske and coll. (Fiske, Cuddy, Glick and Xu, 2002). To assess the influence of Warmth and Competence on risk, we carried out a priming episode using antivirus cases on which there were pictures of people either perceived as warm or competent. We used a manipulation check with the items proposed by Monin (Monin et al., 2008), evaluating how much the cases appeared warm (communal) and competent (agentic). Finally, we measured participants' risk-taking through a computerized task named the Balloon Analogue Risk Task (Lejuez et al., 2002). Data analysis were performed using a generalized linear mixed model on the number of explosions and the number of pumps. Subsequent analyses showed that, compared to a baseline, women take more risk when competence is strongly activated and warmth is low. For men, risk-taking is higher when competence is low and warmth is high. These results may have implications for the safety of individuals and professionals on the Internet.

P67 - The importance of head and body orientation in visual perspective taking

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Individuals easily and spontaneously compute what other people see. However, mechanisms implicated in such computation remain unclear. The aim of the study was to examine the extent to which individuals rely on body orientation (independently from head orientation or gaze direction) when they take someone else's visual perspective. Participants were presented with pictures showing a lateral view into a room with the left, back and right walls visible, and with red discs displayed on the lateral walls. A human avatar was positioned in the center of the room, with his head orientation congruent or incongruent with the orientation of his body. This meant that on incongruent trials, some discs were in front of the head while other discs were in front of the body. Participants were asked to judge if a given number corresponded to the number seen by the avatar. Participants took longer to judge the perspective of the avatar when his head orientation was incongruent compared to congruent with his body orientation. More importantly, for incongruent trials, they also took longer to reject an incorrect number cue when that number corresponded to the number of discs in front of the body than when the number cue corresponded to the total number of discs present in the room (egocentric perspective). The results show that individuals take into account body orientation independently of their head orientation to compute other people's visual experience.

P68 - **Compensation and social comparison: Implications for the self**

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Two fundamental dimensions underlie social judgment: warmth and competence (e.g. Fiske et al., 2002, 2007). A negative relationship exists between those two dimensions, so that a positive judgment on one will lead to a negative judgement on the other, an effect called “compensation” (e.g. Yzerbyt, Provost & Corneille, 2005). To our knowledge, work on *compensation* focused on comparison contexts between groups or target individuals (for an exception, see Kervyn, Bergsieker, Grignard & Yzerbyt, 2016), neglecting the implications those comparisons can have on self-perception. To investigate those implications, we conducted two studies using the Quiz Master paradigm (Ross, Amabile & Steinmetz, 1997). In a quiz task, participants were randomly assigned to questioner/answerer roles (study 1) or answerer/observer (study 2). They were then asked to complete two Implicit Association Tests (Warmth-IAT and Competence-IAT) and explicit measures of warmth and competence. We expected the answerers to attribute more competence to the questioners than themselves, but to compensate by perceiving themselves warmer. Our results provide partial support for this hypothesis: answerers perceive questioners as more competent than themselves, replicating the classical effect of the Quiz Master (study 1), but no effect was observed on warmth. Study 2, currently in progress, aims to address some of Study 1’s shortcomings and focuses on the compensation effect on warmth). Together, these two studies advance our knowledge on some of the boundaries in interpersonal comparison and their implications for self-perception.

Health psychology

Room: SAN 1.6

P69 - Promoting self-management in chronically ill people within primary care: a needs assessment among patients and caregivers

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The number of adults living with one or more chronic diseases is rapidly increasing in developed countries. This growing population can be assisted by promoting self-management, meaning the provision of information and training of skills to better manage disease-related problems. Our project goal is to develop and evaluate a self-management group program suitable to be implemented within the Flemish primary care setting. This study aimed at exploring the needs of principal stakeholders involved in the conduct and implementation of such a Flemish prototype. A qualitative study was conducted comprising six focus group and two face-to-face interviews among chronically ill people and caregivers (i.e., home care nurses, physicians, physiotherapists, pharmacists and nutritionists). We used a question guide that was grounded in a literature review on existing self-management programs. All stakeholders urged the need for more information and higher access to supportive resources enabling to better self-manage their disease(s). To the example of existing group programs, the Flemish prototype should tackle main themes as dealing with psychosocial consequences (e.g., acceptance), life style education, and communication with family and caregivers. Much more, the Flemish example should incorporate methods as goal setting and tailoring in order to meet patients' individual needs and goals. This study underscores the need for a generic

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self-management program to enhance self-management among a growing population of people suffering from often multimorbid problems. In order to be successful, it is imperative to adapt it to the needs and aims of Flemish primary care stakeholders.

P70 - Do pain-related movements enhance somatosensory processing?

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A central idea in several pain theories is that individuals automatically allocate attention to pain-related information. Recent studies have shown that pain may enhance somatosensory perception by guiding attention towards body parts under threat. Currently missing is research examining somatosensory processing in real-life situations, for example in the context of movements. The goal of the current study was to investigate whether performing a movement associated with pain increases somatosensory processing at the moving body part. Healthy participants (n=40) were asked to respond to a cue by performing a left or right hand movement. Importantly, participants learned that one of both movements was associated with a painful electrical stimulation on the moving hand, while the other movement was never followed by pain. Somatosensory evoked potentials (SEP) to an innocuous tactile stimulus that was administered on the left or right hand during the execution of the pain-related versus neutral movement were registered. We expected that stimulation on the pain-related hand during movement would elicit different amplitudes for attentional components, indicating an attentional modulation of somatosensory processing. Data have been collected, and results will be presented at the conference. Enhanced somatosensory processing would suggest that the performance of a painful movement leads to attentional prioritization of the body part under threat. The possible role of attentional somatosensory modulation in pain-related movement impairment will be discussed, as well as the use of this paradigm to study somatosensory processing during movements in chronic pain patients.

P71 - **Smartphone addicted? Development of a Dutch smartphone dependence questionnaire**

Sara Dieltiens¹ & Tim Vanhooymissen¹

¹ *Thomas More University College, Antwerp*

The use of smartphones and mobile phones in general has increased enormously during the past few years, especially in adolescents. The aim of this study was to develop a Dutch self-administered questionnaire for assessing potential smartphone addiction. The most relevant questionnaire to date, the Test for Mobile Phone Dependence (TMD), was translated from Spanish to Dutch. In this study, 192 participants were recruited from the Thomas More University College in Antwerp (Applied Psychology freshmen). This sample included 30,2% male and 69,8% female students between 17 and 27 years old ($M = 19$; $SD = 1,53$). The questionnaire consisted of 20 items with a high internal consistency (Cronbach's $\alpha = ,88$). An exploratory factor analysis revealed 3 factors: Situations/Evolution/Controle (first factor), Conflicts/Cost (second factor) and Feelings (third factor). Furthermore, analysis based on T-tests was conducted. These tests indicated that female smartphone users scored higher than male users on the first and third factor. There were no gender differences found for the second factor. Another T-test revealed a significant age differences for the first and third factor. Students who were 18 years or younger scored significantly higher than students who were 19 years or older. No significant age differences were found with regard to the second factor. The SAT proved to be a reliable self-administered questionnaire to investigate smartphone addiction in adolescents.

**P72 - The psychosocial needs of the spouses of cancer patients:
what is the benefit of the inclusion of the patient in the
intervention?**

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Cancer has negative consequences not only on the patient but also on their spouse, who show higher emotional distress (Schmid-Büchi et al., 2011), a perception of inequity (Ybema et al., 2001) and more unsatisfied psychosocial needs (Thomas et al., 2001). Psychological interventions for spouses of cancer patients were poorly documented until now, but first results showed that such intervention is effective to improve the spouse's well-being. The main goal of our study is to evaluate the effect of the inclusion of the patient into such intervention. We conducted an intervention study combining psychosocial needs ranking and problem-solving training with 23 couples randomly assigned into 2 groups: the experimental group (EG, n = 11; intervention includes both partners) and the control group (CG, n = 12; intervention includes only spouses). Both partners completed several questionnaires before and after the intervention. Results showed an improvement of the satisfaction related to the spouse's most important psychosocial need ($F = 19.94, p = .000$). Results also revealed a decrease of the patient's perception of inequity ($F = 9.02, p = .007$). No significant difference between the EG and the CG were found. The lack of a positive effect including partners could be explain by the fact that spouses generally do not want to express their distress in front of the patients and also by the small samples size. However, it is important to continue research including spouses to improve the interventions and their well-being.

P73 - Self-stigma and its relation with group identification and self-esteem in alcohol-dependence

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During the last decades, large-range emotional and interpersonal impairments have been documented in alcohol-dependent individuals (ADI), notably for emotional expression recognition (Phillipot et al., 1999), empathy (Martinotti et al., 2009) or theory of mind (Maurage et al., 2015). Alcohol-dependence is also related to strong social stigmatization in our societies (Room, 2005). It has been suggested that this external stigma and social rejection might in fine be internalized by the patient, leading to self-stigma (Corrigan et al., 2011) and thus further increasing these interpersonal difficulties and lowering self-esteem (Ritsher & Phelan, 2004). It has been showed that group identification could be protector of self-esteem by reducing self-stigma (Watson et al., 2007). However, the effective presence of self-stigma has up to now not been empirically evaluated in alcohol-dependence, and the present study is the first to propose such exploration. Self-reported questionnaires were used to assess self-stigma, group identification and self-esteem among 50 AD, using Internalized Stigma of Mental Illness Scale for AD people (Ritsher et al., 2003), modified version of Group Identification Scale (Leach et al., 2008) and Self-Esteem Scale (Rosenberg, 1979). AD simultaneously reported high levels of self-stigma and low levels of self-esteem. Group identification was also positively correlated with self-stigma and negatively correlated with self-esteem. AD is related to strong self-stigma, related to reduced self-esteem. Importantly, strong group identification does not seem to constitute a protective factor towards self-stigma, as suggested in previous reports, but might rather be related to even increased social stigma.

P74 - Does exposure to advertisements for e-cigarettes increase the interest to use those in adolescents?

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² *KU Leuven*

Some tobacco control experts believe that advertisements of e-cigs will increase tobacco smoking in young people (gateway hypothesis) or hypothesize that such advertising will lead to renormalisation of regular smoking. In this study, we investigate the impact of advertising on the smoking attitudes/intentions of adolescents. Using social media and e-mail, we distributed a web-based survey and collected data from 242 respondents. We divided 81 never-smoking respondents into three conditions. The first group watched an advertisement about the different types of e-cigs, the second an advertisement about the flavors in e-cigs and the third (control) group did not see any advertisements. Afterwards, all completed a questionnaire on the intention to buy the product, the appeal of the tobacco cigarette/e-cig and risk perceptions. Participants who were exposed to an advertisement including e-cig flavors indicated more (compared to the participants who saw an ad including different e-cig types) that they would buy the product after seeing this ad, and indicated more that they wanted to try the product. However, there was no effect of the different ads on the appeal of the e-cig and/or the tobacco cigarette, the risk perception or smoking intention. Exposure to adverts for e-cigs does not seem to increase the appeal of tobacco smoking and/or vaping in adolescents, nor did it reduce the high perceived harm of tobacco smoking. However, adverts about the flavors in e-cigs resulted in slightly greater interest in buying/trying e-cigs, even though the predominant reaction remained rejection/denial of buying/trying intentions.

P75 - Reducing technostress: A systematic review on interventions and their components

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Technostress, or stress induced by technologies, is becoming increasingly common. Evidence is accumulating that ICT is responsible for heightened levels of stress in individuals. As the evidence base for mechanisms through which technostress is induced grows, several interventions have already been developed in order to address the issue. There is however a large diversity in the conceptualization and focus of these interventions. The goal of the current review was therefore to provide an overview of empirically validated interventions, highlighting both the overall effectiveness and the different intervention components. Relevant studies were selected from 2005-2015 according to predetermined criteria. Twelve studies were withheld: each study was evaluated in detail, including its study characteristics, essential intervention components, and effectiveness. The average study sample size consisted of 337 participants (SD= 271). One study made use of a (non-randomized) controlled design, whereas others relied on single group pre-post measurements. Out of the 12 interventions, eight reported positive effects specifically related to technostress. The most common intervention components were providing tech support (N = 8), stimulating participative management (N = 6), and offering computer training (N = 5). Several recurrent components of technostress interventions were found. Although studies were characterized by a high number of participants, the choice of intervention design is however worrisome, as not a single study is an RCT, the highest attainable standard. More studies of high-quality methodology are required before any conclusions related to the effectiveness of existing interventions or their components can be made.

P76 - Illness intrusiveness in parents and glycemic control in youth with type 1 diabetes: intergenerational associations and processes

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Type 1 Diabetes (T1D) is a chronic condition accompanied by strict treatment guidelines, impacting both the patient and the surrounding family. Although previous literature has examined specific associations linking parental and youth functioning, studies examining encompassing intergenerational models are scarce. The present multi-informant study investigated an intergenerational path-model, linking illness intrusiveness in parents to patient glycemic control. More specifically, parental functioning (illness intrusiveness and depressive symptoms) was expected to predict patient functioning (depressive symptoms, treatment adherence, and glycemic control) through parenting practices (overprotection and psychological control). 316 patient-mother dyads and 277 patient-father dyads participated at the first wave of an ongoing longitudinal study (patients with T1D, aged 14-25, living at home). Parents reported on their experience of illness-intrusiveness, their depressive symptoms, and patient's treatment adherence. Patients indicated their depressive symptoms and treatment adherence. Medical records provided HbA1c-values. Parenting practices, as operationalized by the dimensions of overprotection and psychological control, were assessed in both parents and patients. Structural equation modelling favored our hypothesized path model to an alternative, child-driven model. An adequate fit was found for both patient-mother and patient-father dyads. Parental functioning predicted patient functioning with parenting practices as intervening mechanisms. Parental illness intrusiveness was associated with parental depressive symptoms, both predicting overprotection and psychological control. Psychological control in particular predicted patient depressive symptoms, treatment adherence, and glycemic control. These findings underscore the importance of the context when considering the functioning of youth with T1D. Longitudinal

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analyses are warranted to further investigate bidirectional or transactional pathways.

P77 - Is neurocognitive functioning altered in childhood solid non-CNS tumor survivors? A multivariate exploration

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Chemotherapy has frequently been associated with neurocognitive sequelae in leukemia survivors, but evidence for childhood non-CNS tumors remains limited. We aimed to explore cognitive functioning of childhood solid non-CNS tumor survivors. Neurocognitive data were acquired for solid non-CNS tumor survivors (n=20) and age-matched controls without history of cancer (n=20) (age =22.34, [16.14-30.40 years], 18 females, 22 males) by using an extensive battery of cognitive assessments including intelligence, verbal and visual memory, and attentional functioning. Patients were treated according to different chemotherapy protocols i.e. EURAMOS1, RMS2005, NRSTS2005, Euro-Ewing99, MMT95. After multivariate analysis for each main cognitive domain including all subscales, specific subfunctions were examined in univariate analyses, for all subscales separately. (1)Multivariate analyses MANOVAs yielded a main effect of patient vs. control for verbal memory (p=.006) and attentional functioning (p=.022). We did not find main effects for intellectual functioning (p=.199), or visual memory (p=.888). (2)Univariate analyses Specific comparisons showed significant differences between controls and survivors in false recognition of words (p<.001), focused attention with increased memory load (p=.049) and basic attentional reaction speed (p=.022). Although there was no difference in global intellectual disfunctioning, a significant difference was demonstrated for Working Memory (p=.037). This is the first study providing evidence for potential cognitive difficulties in childhood solid non-CNS tumor survivors. We showed that there was no main difference in intellectual functioning, but verbal memory, working memory and attentional functioning appeared

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affected. Future research will be necessary to distinguish between potential neurotoxicity due to chemotherapy, educational factors and emotional functioning.

P78 - Observational learning of pain-related fear: Impact on attention to pain

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Pain-related fear (PRF) is an important factor in the development of chronic pain. We will investigate whether this PRF can be learned through the observation of others' pain in students (N=50). Additionally, we will study the impact of this observationally learned PRF on the attention to pain-related stimuli. For this study, we conditioned students to associate a certain color with a painful response. They were shown video clips of women with painful expressions and an arm with electrodes making a painful gesture. These clips were displayed on one of two background colours. The other background colour was always followed by a neutral stimulus. We want subjects to associate the first colour with a painful response while the other colour represents a neutral response. To measure attentional bias to pain, we used a dot-probe paradigm in which neutral and painful facial expressions were presented on a coloured background. In half of the experimental blocks, stimuli were presented on the colour associated with pain responses (threatening context) and in the other half stimuli were presented on the second colour (safety context). We measured reaction times and accuracy during the dot probe task. Furthermore, the amount of PRF (skin conductance and self-report) and pain expectancy (self-report) associated with both colours was also measured. We hypothesized that pain expectancy and PRF will be higher in the threatening context compared to the safety context. We also hypothesized that subjects' attention to pain will be enhanced in the threatening context compared to the safety context.

P79 - The effects of electronic smoking (vaping) on quit rates, craving, benefits and complaints

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Forty-eight smokers participated in this first study on the effects of vaping in Flanders. After a general intake, participants were instructed to come to our lab while being four hours abstinent. The lab session started with a measurement to determine the exhaled level of CO and a craving-VAS. Then, two experimental groups of each 16 participants were allowed to try out the e-cig and vape for 5 minutes, while a control group of 16 participants was allowed to smoke their regular tobacco cigarette for 5 minutes. Immediately after vaping/smoking, 5, 10, 30 and 50 minutes later, the CO measurement and craving VASs were repeated. At the end of this lab session, the participants of the experimental groups received an e-cig kit to use for two months and they were instructed to try out this material. The control group did not receive any material and kept on smoking. Two analogue lab sessions followed one and two months later. At the end of the third lab session, the control group also received an e-cig kit. We followed up our participants five (online) and eight (real life) months later. Results showed that (1) the e-cig is effective in reducing craving, (2) very few complaints are reported and at a lower level than in smokers, (3) a lot of benefits are experienced while using this device, and (4) absolute quit rates after eight months are higher than compared to regular interventions, while a substantial amount also decreased their smoking by 50 to 80%.

P80 - The acquisition of pain-related fear: Observational conditioning in children and adults

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Pain-related fear (PRF) has been associated with the development and sustainment of chronic pain. We studied whether children and adults are sensitive to others' pain and whether observing others' pain can induce PRF. Children (8-12 yrs, N = 20) and students (N = 32) watched 64 movies of women (i.e., the models) immersing their hand in cold water (Cold Pressor Task; CPT). The movies were shown on a colored background. One color (CS+) was followed by a painful movie (UCS) in 75% of the cases while the other (CS-) was always followed by a neutral movie. To assess sensitivity to pain, participants rated the model's pain after each movie. Furthermore, learning of the CS-UCS association was checked by asking participants to indicate which color was linked to pain. Finally, participants rated expected pain intensity and PRF when imagining they would have to perform a CPT themselves. The CS-UCS association was learned by observing others' pain. Furthermore, participants rated painful expressions as significantly more painful than neutral expressions. This learning had an impact on expectations (pain intensity and PRF) towards performing the CPT for children but not for students. Our results indicate that a neutral stimulus (e.g., a colored screen) can become a cue for pain merely by observing others' pain. In children, this learning induced PRF towards the CPT when the cue for pain (CS+) is displayed. Possibly, the idea to immerse a hand in cold water was not threatening enough to induce PRF in students.

School psychology

Room: SAN 1.7

P81 - Cyberbullying perpetration and victimization: prevalence and correlates among primary school children

Chloé Tolmatcheff¹, Neda Bebiroglu¹, Elizabeth Olivier², & Benoit Galand¹

¹ *Université catholique de Louvain*

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Cyberbullying has been associated with a number of negative outcomes, such as anxiety, depression and drug use (Kowalski, et al., 2014). However, less is known about how cyberbullying relates to traditional bullying and psychosocial functioning, especially in children. Accordingly, the main goal of this study was to examine the relation between cyberbullying and traditional bullying and look at how it is associated with feeling rejected by peers, feeling depressed and feeling safe at school among children. We obtained data on traditional bullying (perpetration and victimization) and cyberbullying (perpetration and victimization) from a geographically diverse sample of primary school children (N=2217, M=10.13y, SD=1.06) through self-reported questionnaires. Prevalence rates for cyberbullying victimization and perpetration were 11.6% and 12.3%, respectively. Traditional bullying and cyberbullying were positively correlated. Results from regression analyses indicated that children who reported higher levels of victimization (both traditional and cyber) reported higher levels of feeling depressed and lower levels of feeling safe at school. Children who reported higher levels of cyberbullying perpetration also reported lower levels of feeling safe at school. Traditional victimization interacted with cyber-victimization to relate to feeling rejected by peers. This study presents a complex picture of the association between traditional bullying and cyberbullying and suggests that they may show similarities as well as differences depending on the child outcome investigated.

P82 - Too cool for school: The role of peer status in adolescents' school engagement trajectories

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Peer relationships play an important role in adolescents' life and their academic development. Consequently, peers can influence students' declining trajectories of school engagement (i.e., behavioral and emotional involvement in learning activities). By taking a multidimensional perspective on both adolescents' engagement (behavioral and emotional engagement, and disaffection) and peer status (likeability and popularity), more differentiated knowledge is provided, which could be relevant for interventions. A large sample of adolescents from Grade 7 to 11 (N = 1,116; Mage = 13.79 years) were questioned annually about their school engagement (Skinner et al., 2008) and aggression (YSR; Achenbach, 1991). Likeability and popularity were assessed using peer nominations. Latent growth curve modeling revealed that likeability was related to higher initial levels of behavioral and emotional engagement. Popularity, however, was related to less behavioral engagement and more behavioral disaffection. Aggression was negatively associated with both engagement dimensions, and positively with disaffection. Moreover, aggression moderated the relation between popularity and initial levels of behavioral engagement, with popular-aggressive students reporting lower initial levels of behavioral engagement compared to popular non-aggressive students. Regarding growth, results showed that the academic advantage of being liked by peers decreased over time. The findings highlight that peer relationships can shape students' engagement trajectories in complex ways, showing (decreasing) positive effects of likeability and negative effects of popularity.

Poster session

It is important that educators are aware of these social dynamics when they try to improve students' academic careers, as peer status might interfere with showing school engagement.

P83 - The association between home numeracy and children's calculation skills is mediated by basic number processing

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Research has demonstrated that individual differences in basic number processing skills (e.g., comparison and number line estimation) are already observed before the beginning of primary education, and that they are related/predictive for children's (later) mathematics achievement (De Smedt, Verschaffel, & Ghesquière, 2009; Libertus, Feigenson, & Halberda, 2013; Sasanguie, Van den Bussche, & Reynvoet, 2012; Schneider, et al., 2016). One of the factors that is related to kindergarteners' basic number processing skills is the frequency of the numeracy activities (e.g., counting objects, writing numbers) at home, typically referred to as home numeracy (Blevins-Knabe & Musun-Miller, 1996; Kleemans, Peeters, Segers, & Verhoeven, 2012; LeFevre et al., 2009). The present study investigated the association between kindergarteners' home numeracy activities, their basic number processing and calculation skills. Participants were 128 kindergarteners (mean age = 5.4 years) and their parents. The children completed non-symbolic and symbolic comparison, non-symbolic and symbolic number line estimation, enumeration and connecting tasks, and a calculation test. Their parents completed a questionnaire regarding the frequency of the numeracy activities that they get engaged in with their children at home. The mediation analysis demonstrated that formal home numeracy activities (i.e. number practices) were associated with calculation skills only through the effects of mapping skills (i.e. enumeration and connecting). The results suggest that when parents practice numbers with their children (e.g. via counting objects or identifying names of written numerals), this seems particularly relevant for the children's mapping skills and in turn also for their calculation skills.

P84 - Bullying and being bullied: Latent class analysis of victimization and bullying among 4th and 6th grade students

Elizabeth Olivier^{1,2}, Neda Bebiroglu Abiven¹, Chloé Tolmatcheff¹, & Benoit Galand¹

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As early as elementary school, students are exposed to bullying, which has serious implications for their schooling. Past literature has shown that students may be uninvolved, occasionally or frequently involved in bullying either as victims or perpetrators (Wang et al., 2009; Williford et al., 2011). Some studies have also considered the joint occurrence of victimization and bullying. However, these studies rely on theory rather than on statistical indicators to establish four groups of students (uninvolved, victims, bullies, bully-victims) (Nylund et al., 2007; Wang et al., 2012). This is why our study aims at relying on solid statistical methods to replicate these theoretical subgroups. A sample of 2,090 4th to 6th grade students answered a questionnaire on bullying and well-being. We first conducted latent-class analysis in order to replicate past research subgroups of victims and bullies separately, and second we combined these dimensions in a single analysis to establish the co-occurrence of victimization and bullying. Our results replicated the three level subgroups of bullies and victims identified in previous studies. When combining victimization and bullying, three subgroups were identified: “uninvolved” (62.4%), “victims” (25.2%) and “bully-victims” (12.4%). Boys were overrepresented in the bully-victims group. In contrast with theoretical hypothesis suggesting four groups, our results showed that no students are only involved as bullies. This may indicate that students who bully their peers are engaged in negative interactions, which put themselves at great risk of being victims. Hence, bullies may benefit from interventions targeting victims. Implications will be discussed.

**P85 - Creating a diagnostic instrument for first year students
that measures initial competences of the professional
bachelor in applied psychology**

Lotte Portael¹, Walter Magez², Amber Horsten¹, Annemie Bos^{1,2}, Ivo
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Over the last years more and more students have enrolled in Flemish higher education. These students are facing the difficult task to choose an education that matches their competences and personality. The high dropout number (30%) that characterizes the Flemish higher education illustrates that this is not an easy task. In the Professional Bachelor Applied Psychology also one out of three students cease their studies during or at the end of the first year. When students start higher education, they are faced with the expectations of their study choice related to the competences they have at the start of the program. Research shows that acquired knowledge in secondary education is an important predictor for study success and dropout. The purpose of this study is to develop a reliable and valid diagnostic instrument to assess the required competences of students at the start of the Professional Bachelor Applied Psychology. This instrument will be used to support students to increase their academic success. The diagnostic instrument contains measures for various competences i.e., comprehensive reading, academic Dutch, mathematical insight and memory. The instrument was completed by two groups of first year students of the Professional Bachelor Applied Psychology. Part 1 and part 3 of the instrument were completed by 214 students. Part 2 was completed by 144 students. Item analyses regarding internal and external criteria (study success) will be conducted to determine reliability and validity of the developed instrument. Results & conclusions will be presented at the conference.

Assessment

Room: SAN 1.7

P86 - Convergence between the Minnesota Multiphasic Personality Inventory -2 - Restructured Form (MMPI-2-RF) and Core Components of Maladaptive Personality Functioning

Mercedes De Weerd¹ & Gina Rossi¹

¹ Vrije Universiteit Brussel

The aim of this study was to explore the relationship between the MMPI-2-RF scales and the domains and facets of the Severity Indices of Personality Problems (SIPP-118) which is an index for treatment outcome. In the DSM-5 section III, maladaptive personality functioning (criterion A) is defined as an important criterion to assess personality pathology. In order to see how personality functioning is related to and can be differentiated from maladaptive traits, areas of convergence and divergence between the SIPP-118 scales (operationalization of criterion A) and the MMPI-2-RF Personality Psychopathology Five (PSY-5-r) scales, which are conceptually similar to the DSM-5 proposed maladaptive traits (criterion B), were investigated. Furthermore we examined the association between maladaptive personality functioning (SIPP-118) and psychopathology (RC and Specific Problem Scales of the MMPI-2-RF). Pearson correlations within a community sample (N=311; 115 men, 196 women) with age ranging from 18 to 87 (mean age=38.66, SD=17.89) were calculated. Results showed strong correlations between: RC scales measuring internalizing problems and SIPP-domains and between internalizing specific problem scales and related domains and facets of SIPP-118. Similar results were found for the association between PSY-5-r scales and SIPP-118. There were however some overlapping constructs, mainly internalizing problems (e.g. Negative Emotionality/Neuroticism-revised and SIPP domains, self-control ($d=.70$) and identity integration ($d= -.62$)) but only 49% of the variance was shared meaning about half of the variance was still unique. The SIPP-118 provides unique information that is not covered by the MMPI-2-RF scales. More results will be discussed.

P87 - **Validity of the NLV**

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To detect cognitive change in TBI patients clinicians first need to estimate the premorbid ability level. The most common used instrument is the “Nederlandse Leestest voor Volwassenen” (Schmand, Lindeboom, & Van Harskamp, 1992) (Dutch version of the NART). This test aims to estimate one’s level of premorbid intelligence, as previous research showed that performance on the NLV correlated with performance on the WAIS in healthy subjects (Bouma, Mulder & Lindeboom, 1998; Evers, van Vliet-Mulder & Groot, 2000). Because of a new WAIS version this study wants to investigate if the NLV also correlates with the WAIS-IV. Scores of the NLV were expected to correlate with TIQ and VIQ of the WAIS-IV. Thirty persons (age between 20 and 30, 15 male & 15 female), recruited voluntary, were tested with both WAIS-IV and NLV (counterbalanced). Participants were not diagnosed as TBI patient, had no psychiatric background and did not use any sedative- or sleep medication. No correlation was found between NLV Total score and Total IQ of the WAIS-IV. There were also no correlations between Total score of the NLV and Verbal IQ or Performat IQ. Furthermore, there were no correlations registered between NLV and any of the Indexes. At subtest level there was just a correlation with the NLV Total score and the subtest “Letters and numbers sequencing”. Since the Total score of the NLV did not correlate with neither IQ-, nor Indexscores of the WAIS-IV, this study concluded that the NLV does not represent intelligence and is therefore no reliable instrument to estimate premorbid intelligence.

P88 - Clinical normative data for the Cognitive Test Battery for seniors

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The COTESS is the new version of the Flemish Dementia Battery (VDB). This new test battery consists of 37 subtests which aim to screen different cognitive functions such as memory, attention, executive functioning, inhibition, orientation, language functioning and praxis. This battery is designed to differentiate for the diagnosis of dementia. Normative data is already available, and the test is used in practice. The current study compares the performance of healthy subjects with a group of patients diagnosed with dementia to verify the construct validity. The clinical group was expected to differentiate on all subtests. The clinical group consisted of 84 participants (60 female and 24 male, age 50-93) diagnosed with dementia who were tested with one or more subtests of the COTESS. Patients with psychiatric history or co-morbidity with delier, TBI, Wernicke-Korsakov, Parkinsons disease and aids were not included. The participants of the healthy group were matched on age, sex and education. An independent samples T-test found significant discrepancies between the two groups for most of the subtests. However no significant discrepancies were found for the subtests: 'Tien Figuren A benoemen', 'Klopreeksen: gelijke respons', 'Zinnen', 'Symbolen detecteren: tijd', 'Technisch Lezen', 'Begrijpend Lezen' and 'Doolhoven: uitgang bereiken'. The hypothesis that the clinical dementia group would perform worse on the subtests of the COTESS than the healthy group is confirmed for the subtests which measure attention, memory, orientation, praxis, somatognosis, logic reasoning, word fluency and response inhibition. No discrepancies were found for language functioning and conscious behaviour.

P89 - Self-reported psychopathic traits and distorted response styles

D. Stockman¹, & K. Uzieblo^{1,2}

¹ *Ghent University*

² *Thomas More University College, Antwerp*

Psychopathy is a dimensional construct characterized by affective, interpersonal, and behavioural deviances. A willingness to lie, deceive and manipulate is assumed to be a core characteristic of psychopathy. Given the deceptive nature of psychopathic individuals, various concerns regarding the utility of assessing psychopathy via self-report are being raised. Hence it is important to investigate the effect of response distortion on self-report inventories of psychopathy. The current study aims to investigate (1) the relation between self-reported psychopathic traits and social desirability, and (2) whether a faking good response set differentially affects the scores on two psychopathy measures, i.e., the Self-Report Psychopathy Scale Short Form (SRP-III SF) and the Triarchic Psychopathy Measure (TriPM). First, a sample consisting of 149 participants ($M=27.36$, $SD=11.55$; 81% females) recruited from the general population filled in the SRP-III SF, TriPM, and the Eysenck Personality Questionnaire-Revised-Lie Scale (EPQ-R). Preliminary results suggest that -in contrary to previous studies- scores on both psychopathy measures were positively related to EPQ-R scores. In the second part of the study a subsample consisting of 66 undergraduate students completed the SRP-SF and the TriPM with instructions to fake good. Preliminary results indicate that scores on the SRP-III SF scales Callous Affect and Impulsive Lifestyle, and on the TriPM-scale Disinhibition significantly decreased in the faking good condition, whereas scores on the TriPM-scale Boldness significantly increased. Scores on the remaining SRP-SF and TriPM-scales were unaffected by attempts to fake good. The implications of these results for the assessment of psychopathy will be discussed.

P90 - Picture your day: The potential of wearable cameras for depression prevention

C. Van Gorp¹ & T. Van Daele¹

¹ Applied Psychology, Thomas More University College Antwerp, Belgium

Depressive symptoms are highly prevalent in student populations. Recent technological innovations seem to hold great promise for a more tailored approach towards this specific audience. One example are lifelogging cameras which automatically capture any user's environment. Such cameras might be valuable tools in the context of memory specificity trainings. The purpose of such trainings is to teach participants to increase the specificity of their autobiographical memories. Enhancing this specificity has been shown to be beneficial for the reduction of depressive symptoms and the prevention of depression. 'Picture your Day' aims to explore both the potential and the pitfalls of such a technology-enhanced intervention. In six single case studies, participants took part in a two-day trial, in which essential intervention components were evaluated: (1) selecting relevant pictures from the past day (of positive valence on the first day and negative valence on the second day), (2) uploading these pictures to a dedicated website, and (3) formulating related specific memories. A questionnaire was provided pre-intervention and was presented again post-intervention together with a semi-structured interview. Both tools were based on the Unified theory of acceptance and use of technology. The pilot study will provide valuable insights on how lifelogging cameras can further improve memory specificity (training). Input on technological requirements of the platform, on end-user knowledge, and on concerns related to privacy and ethical issues will be used to further optimize intervention experience and acceptability.

Experimental psychology

Room: SAN 1.7

P91 - Associative Symmetry and Stimulus Class Formation in Humans: Are They Just Like Pigeons?

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³ *Department of Experimental Clinical and Health Psychology, Ghent University, Belgium*

Associative symmetry is the phenomenon that organisms will respond to B-A (i.e., select A in the presence of B) after they effectively learned the relation A-B (i.e., select B in the presence of A). For a long time, it was assumed that associative symmetry emerges from direct bidirectional control between A and B established during A-B training. Recently it was demonstrated that associative symmetry in pigeons relies on indirect class formation (Urcuioli, 2008). In four experiments, we assessed associative symmetry in humans using a successive go/no-go matching-to-sample procedure. We demonstrate that, although humans are able to derive relations based on indirect class formation, this mechanism does not form the basis for their production of associative symmetry. Instead, we argue that associative symmetry in humans, unlike in pigeons, might reflect direct bidirectional control.

P92 - **Using refutational text to eradicate a maladaptive heuristic**

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Heuristics often cause people to give incorrect responses to seemingly easy tasks (Kahneman & Tversky, 1972). One of these heuristics is the area heuristic, which causes people to incorrectly interpret box plots (Lem et al., 2013). We have already shown (Lem et al., 2015) that refutational text (i.e., a text that contains the explicit refutation of an incorrect conception) can help people to interpret box plots more correctly. The goal of this study was to test to what extent refutational text can lead to the eradication of the area heuristic. Participants were 102 young adults who were randomly assigned to either the refutation condition, wherein they read a refutational text on box plots, or a control condition, wherein they read a control text on box plots. Afterwards participants solved 40 items specifically designed to test the extent to which they were affected by the area heuristic. Results showed that the area heuristic was not eradicated, but rather that refutational text decreased the influence of the area heuristic, which was visible not only in accuracy rate and reaction time patterns, but also by the fact that in the refutation condition there were remarkably more participants with near perfect scores than in the control condition. Although refutational text can help participants overcome the area heuristic, it was not able to completely eradicate it. Further research could try to improve the refutational text to increase its effect and also to test the effect of refutational text in other topics.

P93 - The effect of the typicality of an extinction stimulus on return of fear

Sara Scheveneels¹, Eline Belmans¹, Yannick Boddez¹, Marc Patrick Bennett², & Dirk Hermans¹

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² *Cognitive and Behavioural Neuroscience Research Group, University College Dublin*

Clients might believe that the stimulus used in exposure therapy (e.g., a particular spider) is not representative of other stimuli of the feared category (i.e., other spiders). This could result in an inadequate generalization of treatment effects from stimuli used during exposure to those encountered later, thus causing a return of fear. In this study, we examined the effect of providing information about the typicality of the extinction stimulus on the generalization of extinction to a new exemplar. In a fear conditioning paradigm, an animal-like figure (A) was paired with an electric shock. Afterwards, in the extinction phase, a different but perceptually similar animal-like figure (B) was presented without the shock. After extinction, half of the participants were instructed that the extinction stimulus was characteristic of all other members of that animal family. The other participants were informed that the extinction stimulus was an atypical exemplar of that animal family. We tested for return of fear responses by presenting a third animal-like figure from this family (C). The data collection of this study is still in progress, results will be presented at the meeting.

P94 - The influence of inducing positive affect on self-control exertion in dogs

Evelien Viroux¹, Stef Feijen², Sarah Beurms², Holly Miller²

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² *KU Leuven, Leuven, Belgium*

Self-control can be defined as the ability to inhibit prepotent, but ultimately counterproductive behavior. It is essential for adaptive functioning in both humans and dogs. Previous research has found dogs to perform worse on a task after previously having to exert a sufficient amount of self-control (Miller et al., 2010). The resource hypothesis explains this effect by stating that self-control is regulated by a limited amount of energy. More recent theories, however, are focusing on motivational aspects. We expect that dopamine might play a role in how motivation affects self-control. Therefore, we investigate whether we can restore performance by inducing positive affect, which should raise tonic dopamine levels, after an initial self-control task. The current study tested dogs' persistence on an unsolvable task after an initial inhibition task or a control task. The inhibition task consisted of an out of sight sit-and-stay exercise for 10 minutes. During the control task the dogs were caged for the same duration. In this phase, the dogs' cardiac activity, and in particular their heart-rate variability, was measured. Then, a positive vs. neutral emotion was induced and the dog's persistence on an unsolvable puzzle task was measured. Based on previous literature, we expected the dogs to persist less after the inhibition task, compared to the control task. Additionally, in line with the theory that a positive emotion will increase dopamine levels, which in turn might increase motivation, we expected persistence to increase in this condition.

**NOMINEES AND WINNER
OF
THE MASTER THESIS AWARD**

Best Master Thesis Award 2016 - Nominees

In alphabetical order:

Jeroen Delplanque, UG

(promoter: T. Verguts)

“The beauty and the brain: Can prediction errors account for musical appreciation?”

Cindy Eira Nunes & Héline Zabeau, UCL

(promoters: M. Mikolajczak & A. Lane)

“Méta-analyse des effets de l’administration de l’ocytocine sur l’humain sain selon trois grandes theories. Impact sur les variables sociales, cognitives et émotionnelles.”

See poster 35

Jellina Prinsen & Evi Coosemans, KUL

(promoter: J. Wagemans)

“Are viewing patterns in individuals with ASD confined to the eye region? A meta-analysis on social attention and feature saliency.”

See poster 19

Sofie Vettori, UG

(promoter D. Marinazzo)

“Aberrant dynamical connectivity in autism spectrum disorders”

See poster 57

AWARD WINNER

The beauty and the brain: can prediction errors account for musical appreciation?

Jeroen Delplanque¹, Clio Janssens¹, & Tom Verguts¹

¹Vrije Universiteit Brussel

The aim of this thesis was to provide an account of which stimulus features influence the experience of beauty. Previous research suggests that stimulus complexity may be an important factor to judgments on beauty. We presented participants with pairs of tone-sequences with varying degrees of random changes. These changes created different levels of complexity. Several measures of complexity were taken into account, but the main variable of interest is Shannon entropy. Previous research has demonstrated that people prefer low entropy (low complexity). Since these stimuli are relatively repetitive, they lead to very few errors in prediction, evoking positive feelings, which may be akin to experiencing beauty. However, reward research shows that people sometimes forego short-term gains to test whether other choices are more rewarding. They strike a balance between exploitation and exploration, meaning sometimes higher entropy may be preferred over minimum entropy. Combining these two views we believe that a curvilinear, rather than a linear, relationship exists between stimulus-complexity and stimulus preference. Our behavioural data showed that stimuli with medium complexity are preferred to stimuli with minimal entropy or extremely high entropy. At the neural level we found that the number of random changes in a sequence modulated the P3-component. These results indicate that stimulus complexity is an important factor during judgments on beauty and they suggest that prediction errors are an important aspect of this experience.

**NOMINEES AND WINNER
OF
THE BACHELOR THESIS AWARD**

Best Bachelor Thesis Award 2016 - Nominees

In alphabetical order:

Dorien Schittecat, Thomas More

(promoter A. Bos)

“Adaptive behaviour in the classroom. A study on a culturally fair screening instrument for adaptive functioning in children aged 6-12 years”

Lieselot Van Looy, Thomas More

(promoter A. Bos)

“Do I like? A study into a shortened version of the interest questionnaire I-Like-basic.”

AWARD WINNER

Do I Like?

Research into a shortened version of the interest questionnaire I-Like-basic

Lieselot Van Looy¹, Walter Magez², & Annemie Bos^{1,2}

¹ *Thomas More University College, Applied Psychology, Antwerp, Belgium*

² *Coordination team Antwerp for Psychological Assessment (Cap vzw), Brasschaat, Belgium*

Career guidance helps students to make an appropriate decision with regard to their study or profession. Research describes personal interest as one of the most important factors for making choices. The I-Like-basic interest questionnaire, free available on the website “Onderwijskiezer”, is constructed for students of the first grade of secondary school to assess their personal interest. The original questionnaire consists of 102 items that refer to 21 interest domains. However, practice showed that the original online version is too long and too specific for pupils of the sixth grade of primary school. This study therefore examined whether a shortened version of the I-Like -basic could be used for these children. Pupils of the sixth grade of primary school (685 boys and 715 girls) filled out the original questionnaire. Results were analyzed using a hierarchical cluster analysis on the 102 items. Items with a ratio of 0.40 or lower were selected. In addition, a number of other criteria were taken into account: Cronbach’s Alpha, Pearson correlation and t-test for independent samples were used for further statistical analysis. A new version of six domains was constructed with a reliability of .78 to .96. These remaining domains match with the domains in the reform of secondary school. The degree of coherence confirmed the structure of this new (short) version. This study constructed a norm based questionnaire in Flanders for pupils (boys and girls) who are in the transition of primary to secondary school (www.onderwijskiezer.be/ilike_basic/).

Bachelor Thesis Award

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