Program & Abstract book

2018 BAPS Meeting

Ghent, May 18th, 2018

Local Organizing Committee (Ghent University)

Geert Crombez
Jan De Houwer (coordinator)
Alexis Dewaele
Lien Goossens
Ruth Krebs
Stefaan Van Damme
Alain Van Hiel

Scientific Committee

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Jan De Houwer (Ghent University)
Alexis Dewaele (Ghent University)
Wim Gevers (Université Libre de Bruxelles)
Lien Goossens (Ghent University)
Ruth Krebs (Ghent University)
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Stefaan Van Damme (Ghent University)
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Eva Van den Bussche (Vrije Universiteit Brussel)
Alain Van Hiel (Ghent University)
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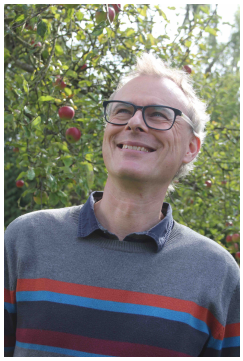
CONTENTS

Welcome from the BAPS president



Dear colleagues,

Our annual meeting is a unique moment. It provides a platform where psychological scientists from Belgium and neighboring countries can meet, interact, and get acquainted with the latest developments in psychological science. It offers to young researchers an opportunity to present their work in a supportive environment.
Being open to all areas of research in psychology, it provides a unique opportunity to learn about the best research in Belgium, to attend talks by leading international keynote speakers, to kick-start and maintain collaborations or to spot talent. And you get all of this within one day, within a very short distance and for a very reasonable fee!

The 2018 edition in Ghent is not only confirming all these benefits, but in many ways will extend them and make this year meeting even more ambitious. Firstly, the local organizers by the selection of the keynote speaker and two invited symposia related to *Psychological science of primary mental health care*, highlighted that our annual meeting is also a topic of interest for professionals in psychology, and this year particularly for clinical psychology. I very much hope that in the future the annual meeting will be a place where many fruitful discussions between researchers and professionals in psychology can happen. This dialogue is central for making our field stronger but also better considered by the society and by our political authorities.

We also need to reinforce the links with our former students. Master's programs in psychology provide excellent skills in research and methods but too often the links with the Faculties disappear very quickly and we don't see the majority of

our former students anymore. We would like the BAPS meeting to be a place where they feel at ease and want to come back to Universities to learn new developments in the field. This year, a collaboration with the Alumni association at UGent was initiated. We will extent this initiative in the next years, hoping that Alumni associations from all Belgian universities will join us.

The BAPS annual meeting is an important moment to acknowledge the quality of psychological research in Belgium. There is already a long tradition to deliver an award for the best Master thesis. This year is also the second time an award will be given for the best Bachelor thesis. The executive committee has decided last year to be more ambitious and implement an award scheme that will also cover the next steps of the academic career. Today represents a very important step in that direction. We will deliver the first award for the best PhD thesis. The very high number of applications we received clearly acknowledge how seriously recent doctors in psychology considered the new award. There is no doubt that it will be an important asset for young researchers to mention this award in their CV. I would like to express my congratulations not only to the three winners of this year but also to all the candidates who were shortlisted and whose names are reported in the program. They can all be proud of this achievement!

One role of BAPS that is less known and that I would like to emphasize is to represent the Belgian researchers at the *Belgian Federation of Psychologists* (BFP-FBP). BFP-FBP was facing some difficulties in the past years regarding its future missions and common goals. BAPS is currently playing a central role for its renovation and restructuring. While there is a consensus for giving more autonomy and responsibilities to all associations being involved in the Federation, the way to impulse a new dynamic of cooperation to defend the interests of all psychologists was more difficult to reach. At the end of 2017, BAPS received an important mandate to chair a mediation process among the associations represented at BFP-FBP. Important progress was made in the last few months and hopefully this will lead to the vote at the end of June of a new structure and new ways of functioning that will be more efficient and more transparent.

Don't forget that BAPS is also editing *Psychologica Belgica*. I would like to mention a new initiative, the '*PhD Critical Review*' papers. Psychologica Belgica encourages researchers who recently obtained their PhD to submit a critical review paper based on the introductory and discussion parts of their PhD thesis.

Let me conclude this welcome word by expressing warm applauds to the UGent organizing committee, composed of Geert Crombez, Jan De Houwer, Alexis Dewaele, Lien Goossens, Ruth Krebs, Stefaan Van Damme, and Alain Van Hiel. I would like to address a specific thank to Jan De Houwer who has been a very efficient coordinator throughout the process. They managed to organize 9 invited symposia on very timely issues. For each symposium, together with co-convenors from other universities, they gathered specialists from all Belgian universities and sometimes from abroad. The submission process went also very well. It ended up with 5 additional symposia, 6 parallel sessions of oral presentations, and about 120 posters. Regarding attendance, we reached 280 registrations online. With the onsite registration, it means that we will be more than 300 participants this year, which is a quite remarkable number!

More than ever, BAPS will today be fulfilling its central goal, which is to *support and promote psychological science in Belgium*.

I wish you all a very fruitful and enjoyable day in Ghent!

Olivier Luminet
President of the *Belgian Association for Psychological Sciences*

Welcome from the local organizing committee

On behalf of the Ghent University Organizing Committee, I have the pleasure of welcoming you to the Faculty of Psychology and Educational Sciences for the 2018 BAPS meeting. We have done our best to make this a memorable meeting that you will find stimulating and enjoyable. With regard to the scientific program, we organized or encouraged the organization of no less that nine invited symposia on a wide variety of topics. Special attention was directed at the timely topic of primary mental health care. The prevalence of Belgian people with mental health problems is high and has increased with 50 % between 2006 and 2010 (Eurobarometer, 2010). Estimates reveal that more than 50% of people with manifest mental health problems do not receive the professional help they need. In response to this challenge, policy makers have called for a restructuring of the mental health system, emphasizing both early detection and treatment/prevention of mental health disorders, as well as social (re)integration of patients with chronic disorders. In line with these important developments, the program contains a Keynote lecture by Pim Cuijpers on primary mental health care, as well as two invited symposia on that topic, one targeted on adults and one on children and adolescents. The selection of the main theme of this year's meeting reveals the continuing commitment of the BAPS to support all psychological science in Belgium, including applied and clinical psychological science.

Another special theme of the meeting is open science and research integrity. Over the past five to ten years, awareness of the importance of scientific integrity and open science has increased significantly. This is evidenced by a range of developments such as changes in the policy of scientific journals (e.g., preregistered reports), tools to help scientists conduct research in a more open manner (e.g., the Open Science Framework), and the installation of committees for scientific research both at the level of universities and at the level of regions and countries (e.g., the Flemish Committee for Scientific Research). Despite these important improvements, there is still work to be done. Although some universities and funding agencies have pledged support for open science and research integrity, in practice they do little to stimulate, support, or reward the adoption of practices that promote open science and research integrity. Many researchers continue to adopt questionable research practices that endanger integrity and keep science closed because they are unaware of the risks involved, do not see the benefits of open science and good research practices, or overestimate the costs of adopting good research practices. Our second Keynote

speaker, Frederick Verbruggen, will highlight the benefits of open science for psychology and will give concrete examples of how you can make your science more open. There is also an invited symposium on open science and research integrity that is directed specifically at concrete ways to improve scientific integrity and open science in your lab.

The program also includes many other invited and submitted symposia, as well as open talk sessions that provide an overview of some of the best research conducted in Belgium. We tried hard to involve colleagues from all Belgian universities from both sides of the country. As such, we hope to facilitate the achievement of a main aim of the BAPS meeting, that is, to facilitate contacts between Belgian psychological scientists. We also tried to heighten the appeal of the poster sessions. For many Belgian psychological scientists, presenting a poster at a BAPS meeting provides the first experience with disseminating their research to a broader audience. Indeed, one of the main aims of the BAPS meeting has always been to offer junior researchers an accessible opportunity to present their work to an audience of peers and experts. It is therefore very important that this first experience is a positive one. With this in mind, we organized two separate poster sessions so that everyone has ample opportunity to visit the posters. We also took a new initiative that involved asking members of the BAPS as well as colleagues from Ghent University to function as “poster buddies”. Each “poster buddy” (for lack of a better name) has agreed to visit at least five posters that match his or her expertise. That way, we hope to further increase the likelihood that poster presenters will experience the poster sessions as rewarding and stimulating. Of course, we strongly encourage all of you to visit the posters. You will be amazed by the quality of the work!

In sum, there is so much to look forward to during this day. Enjoy!

Jan De Houwer
Organizing committee: Geert Crombez, Jan De Houwer (co-ordinator), Alexis Dewaele, Lien Goossens, Ruth Krebs, Stefaan Van Damme, & Alain Van Hiel

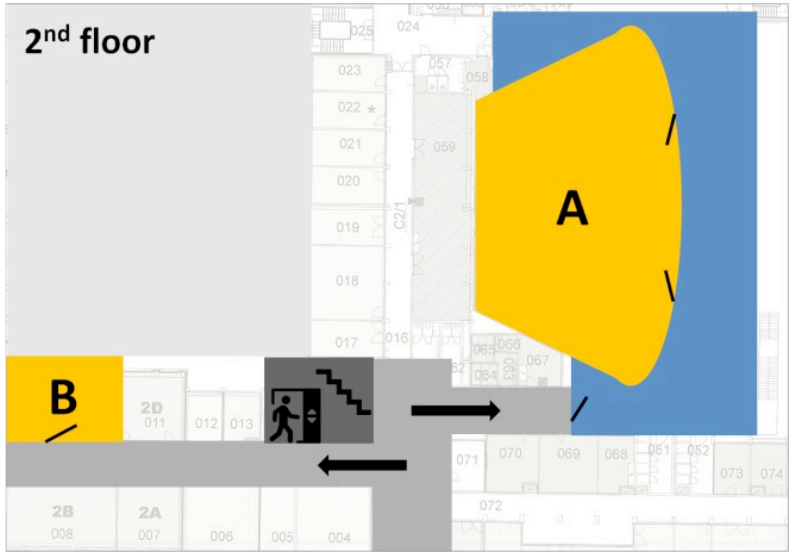
Program at a Glance

2018 BAPS Meeting - Ghent University - 18.05.2018

08.30	Registration - Lobby (main entrance, Faculty of Psychology & Educational Sciences, Henri Dunantlaan 2)					
09.20	Welcome - Room A (auditorium 2, second floor)					
09.30	**Keynote - PIM CUIJPERS - Room A (auditorium 2)**					
10.15	Coffee Break – Outside of Room A (auditorium2, second floor)					
	Room A (auditorium 2)	**Room B** (room 2.2)	**Room C** (room 3.1)	**Room D** (room 3.2)	**Room E** (room 4.2)	**Room F** (room 4.3)
10.40	**Primary mental health care: adults** *S1- Invited Symposium* (A. Dewaele)	**Computational models** *S2- Invited Symposium* (E. Van den Bussche)	**Social groups** *S3- Thematic Session* (K. Dhont)	**Vision by interaction** *S4- Symposium* (G. Vannuscorps)	**Emotion regulation & Health** *S5- Invited Symposium* (L. Goossens)	**Language** *S6- Thematic Session* (S. Majerus)
12:00	Lunch + **Poster Session 1** - Outside of Room A (auditorium2, second floor)					
12:50	**Primary mental health care: children** *S7- Invited Symposium* (C. Braet)	**Consciousness & Cognition** *S8- Thematic Session* (A. Cleeremans)	**Intergroup contact** *S9- Invited Symposium* (J. Van Assche)	**Neuromodulation of prefrontal brain area** *S10- Symposium* (M. Vanderhasselt)	**Chronic illness** *S11- Invited Symposium* (I. Merckaert)	**Close relationships** *S12-Thematic Session* (E. Zech)
14:10	Coffee Break + **Poster Session 2** - Outside of Room A (auditorium2, second floor) *BAPS business meeting - Room B (2.2)*					
15:00	**Mental health care** *S13- Thematic Session* (K. De Cuyper)	**Action and incentive valence** *S14- Invited Symposium* (R. Krebs)	**Sexual and gender prejudice** *S15- Invited Symposium* (C. van Laar)	**Open science and research integrity** *S16- Invited Symposium* (P. Van Dessel)	**Dietary intake** *S17 - Symposium* (S. van den Broucke)	**Attention & Perception** *S18- Thematic Session* (M. Rossignol)
16:20	**Awards Session - Room A (auditorium 2)**					
16:45	**Keynote - FREDERICK VERBRUGGEN - Room A (auditorium 2)**					
17:15	Reception - Outside of Room A (auditorium2, second floor)					

Floor plan

Faculty of Psychology & Educational Sciences, Henri Dunantlaan 2



Session rooms

Poster/ lunch/ reception area

Abstracts

Keynote Lectures

Keynote Lecture

9u30-10u15

Room A

Primary mental health care & early interventions: challenges and opportunities

Pim Cuijpers

Vrije Universiteit Amsterdam, The Netherlands

In the past four decades more than 500 randomized trials have examined the effects of psychological treatments of adult depression. In this presentation I will first give a general overview of what these studies have shown about the effects of different types of psychotherapies, including cognitive behavior therapy, behavioral activation therapy, third wave therapies, interpersonal psychotherapy, non-directive supportive therapy and short-term psychodynamic psychotherapy. Furthermore, research on treatment in primary care and on early interventions sheds light on the effects of treatments in subthreshold depression and of those treatments on the onset of full major depressive disorders. Overall, the psychological treatment of depression in primary care, brief interventions, and internet-based treatments for depression appear effective. Early interventions can prevent the onset of major depression. However, the effects of therapies have also been overestimated because of low quality and publication bias. The relevance of these results will be discussed for both the future of research as well as the future of clinical therapies.

Keynote Lecture

16u45-17u15

Room A

Towards open (psychological) science

Frederick Verbruggen

Ghent University

In the last couple of years, there have been calls from governments, research funders, publishers, as well as grassroots activists, for science to be more open. To some extent, this has to do with recent cases of scientific misconduct or bad research practice that have troubled many disciplines. However, a much more positive case can be made for Open Science as well. In this presentation, I will discuss why Open Science is important for psychology and why we should embrace it (even though it undeniably comes with certain challenges).

Abstracts

Parallel Sessions 1-6

10u40-12u00

S1 - Invited symposium

10u40-12u00

Room A

Primary health care in adults

Organizers: Geert Crombez[1] & Alexis Dewaele[1]
Chair: Alexis Dewaele[1]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

S1.1. Mental health and primary care in Flanders: ongoing innovations and challenges

Chantal Van Audenhove[1]

[1] KU Leuven

Mental health care in Belgium is characterized by a high number of hospital beds and difficult access to community mental health services. Since 2000 the government realized a number of innovations and since 2010 the deinstitutionalization movement received an extra boost by the program of "better mental health care" better known as "article 107". In this presentation a description of the ongoing innovations in community mental health care are described such as: the vision on positive health, recovery and empowerment, networks as new type of organization and the primary care psychologist function with brief interventions. Important challenges remain on the agenda of public health: involvement and support of patients and family carers in treatment choices, full citizenship by participation in work and education, and the fight against stigma, discrimination and poverty.

S1.2. Screening for psychosocial risk factors of chronic pain in primary settings: a systematic review

Geert Crombez[1], Dimitri Van Ryckeghem[1], Annick De Paepe[1], & Elke Veirman[1]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

Chronic pain is a prevalent somatic symptom, and one of the most disabling experiences in the Western world. It is also notoriously difficult to treat. For that reason, the agenda is shifting towards the prevention of chronic pain. Several psychosocial variables have been identified that predict the transition of acute to chronic pain. Likewise, several screening tools for assessing psychosocial risk factors in primary care have been developed. In this presentation, we present a systematic review of available screening tools, evidence and the study quality using the "Prediction model study Risk Of Bias Assessment Tool" (PROBAST). We identified 32 studies, which have validated 6 self-report instruments assessing psychosocial risk factors for chronic pain. Overall, instruments were better in predicting pain-related disability than pain. The quality of the studies was variable. Challenges and opportunities for research and practice are discussed.

S1.3. Mindfulness-based intervention as a primary mental health care

Pierre Phillipot[1]

[1] Université Catholique de Louvain

Mindfulness-based interventions have benefited from a great enthusiasm both from clients and professionals. This enthusiasm has preceded rigorous research on their efficacy and mechanism of action. Research is presently filling this gap. In this talk, I will present a model specifying the psychological processes that are possibly modulated by mindfulness training, and how these processes protect mental health. Empirical evidence supporting the model will be reviewed, with a special emphasis on research from our lab targeting the executive control of attention, repetitive thinking, and body awareness in emotion regulation. Implication for primary mental health care will be specified and perspectives on how psychological science might improve mindfulness-based interventions will be proposed.

S1.4. The potential of online self-help interventions for primary mental health care

Tom Van Daele[1]

[1] KU Leuven

In recent years, there has been a strong increase in diverse technological applications that are being developed for mental health care. Gradually, these are also finding their way to routine care.

The current talk will focus on online self-help interventions, one type of applications that seem particularly promising for primary mental healthcare. After an initial characterization, a narrative review will provide an overview of the current evidence of effectiveness, known mechanisms of change and existing challenges when implementing such interventions in everyday practice. Furthermore, limitations and possible negative effects are also discussed.

S2 - Invited symposium

10u40-12u00

Room B

Computational modelling in cognitive science

Organizers: Eva Van den Bussche[1] & Cristian Buc Baldon[1,2,3]
Chair: Eva Van den Bussche[1]

[1] Department of Experimental and Applied Psychology, Vrije Universiteit Brussel, Belgium
[2] Center for Research in Cognition & Neurosciences, Université Libre de Bruxelles, Belgium
[3] Department of Experimental Psychology, Ghent University, Belgium

S2.1. Recipe for exploring the unknown: Information value, cognitive control and ACC as main ingredients

Irene Cogliati Dezza[1], Axel Cleeremans[1], William Alexander[2]

[1] Centre for Research in Cognition & Neurosciences (CRCN), Université Libre de Bruxelles, Belgium

[2] Department of Experimental Psychology, Ghent University, Belgium

Many decision theories predict that an agent makes choices in order to maximize the expected return obtained from choosing an option and seeks information only if the expected return overcomes the cost of choosing that option. However, humans and animals often make decisions that imply choosing risky novel options where the expected reward value is not known in advance. Recently, we developed a computational model that was able to account for this behaviour by associating a value to information on top of the standard reward-based reinforcement learning formulation. In this talk, I will present two subsequent studies where, using the above computational model, we investigated the cognitive and neural mechanisms that subtend the manner in which humans assign values to information. Altogether, these studies identify information value, cognitive control and ACC as the main factors involved in the exploration of the unknown, providing a formal foundation within which to explore pathologies of goal-directed behavior and uncertainty-based disorders.

S2.2. The EEG footprint of elementary decision making

Stijn Verdonck[1]

[1] Research Group of Quantitative Psychology and Individual Differences, KU Leuven, Belgium

Choice response time experiments are an invaluable tool for the understanding of elementary decision making. Many neurocomputational process models have been proposed for this experimental paradigm, such as the Ratcliff diffusion model (RDM), the Leaky Competing Accumulator (LCA), and the Ising Decision Maker (IDM). It is commonly believed that some trace of the underlying evidence accumulation processes can be found in EEG data. However, an explicit connection between the evidence accumulation processes on the one hand and the actual trial-per-trial EEG signals on the other hand, has never been properly established. We formalize this connection for the three models mentioned above. We find that the EEG signal that best discriminates between stimulus difficulty levels, shows good correspondence with the absolute difference between the two dimensions of evidence accumulation in both the LCA and the IDM. The same signal cannot easily be linked to the one-dimensional evidence accumulation of the RDM.

S2.3. Attention as Bayesian inference: Attentional orienting relies on estimates of expected and unexpected uncertainty

Anna Marzecová[1,2], Eva Van den Bussche[1], Tom Verguts[2]

[1] Department of Experimental and Applied Psychology, Vrije Universiteit Brussel, Belgium
[2] Department of Experimental Psychology, Ghent University, Belgium

The computationally powerful Bayesian framework considers spatial attention as probabilistic inference about which spatial locations are likely to be relevant in the near future. Bayesian principles can be applied to characterise the uncertainty of such beliefs. A recent Bayesian model proposes two forms of uncertainty estimates. On the one hand, expected uncertainty (EUn) relates to unreliability of predictive relationships within a familiar context. On the other hand, unexpected uncertainty (UUn) is triggered by sudden changes in the environment. We investigated how these two sources of uncertainty jointly influence behavioral signatures of orienting. EUn and UUn were orthogonally manipulated in a novel version of the spatial cueing task. They had additive influences on RT. In line with model predictions, higher levels of both EUn and UUn lead to less efficient attentional orienting, reflected in smaller cueing effects. We propose that efficient attentional orienting relies on estimates of expected and unexpected uncertainty.

S2.4. Additive evidence integration in multi-step decision making

Cristian Buc Calderon[1,2,3], Wim Gevers[1], Tom Verguts[3]

[1] Center for Research in Cognition & Neurosciences, Université Libre de Bruxelles, Belgium
[2] Department of Experimental and Applied Psychology, Vrije Universiteit Brussel, Belgium
[3] Department of Experimental Psychology, Ghent University, Belgium

Multi-step decision making situation pervades daily life, but its underlying mechanisms remain obscure. In this talk, we will distinguish four prominent models of multi-step decision making, namely serial stage, hierarchical evidence integration (HEI), hierarchical leaky competing accumulation (HLCA), and probabilistic evidence integration (PEI). We will further discuss how we were able to disentangle these models using a novel two-step reward-based decision paradigm. Our paradigm allowed testing a unique prediction of the HCLA and PEI models. Strikingly, but as predicted by these models, we show that the first-step decision dynamics were initially attracted towards the choice representing the highest sum/mean before being redirected towards the choice representing the maximal reward. Our results demonstrate that in multi-step decisions future outcomes of potential actions are progressively unraveled during the decision process.

S3 - Thematic Session

10u40-12u00

Room C

Social groups

Chair: Kristof Dhont[1]

1 School of Psychology, Keynes College, University of Kent, UK

S3.1. Moving across the borders: Antecedents and consequences of citizenship acquisition

Emanuele Politi[1] & Christian Staerklé[1]

[1]UNILaPS | Social psychology Laboratory, University of Lausanne, Switzerland

Acculturation literature focused very little on the individual mobility of immigrants from one group to another, and consequences of citizenship acquisition in terms of intragroup and intergroup relations are mostly unexplored. Based on a pool of 543 naturalized citizens, we distinguished between three motivational drivers, namely political participation, belongingness and instrumental motives. Moreover, we investigated the relation between naturalization motives and feelings of inclusion in the national ingroup (study 1), and the relation between naturalization motives and political solidarity with the immigrant outgroup (study 2). On the one hand, results of study 1 showed that social status predicted naturalization motives, so that the higher the social status of participants the more they reported political participation and belongingness motives, and the less they reported instrumental motives. In turn, naturalization motives mediated the positive relation between status and feelings of inclusion. Indeed, the first two motives were positively associated to inclusion, whereas the latter was negatively associated to inclusion. On the other hand, results of study 2 revealed that political participation and belongingness motives were positively associated to host culture adoption, that in turn predicted negative opinions towards immigration policies. Conversely, instrumental motives were positively associated to heritage culture maintenance, that in turn predicted positive opinions towards immigration policies. All together our findings unveiled the complex intragroup and intergroup dynamics involved in citizenship acquisition, thereby advancing the theoretical debate around naturalization and enriching acculturation literature with new insights.

S3.2. "Who is a Real National?": Perceived Fit of Culturally Different Peers Predicts National Belonging of Minority Youth

Nadya Gharaei[1], Karen Phalet[1], & Fenella Fleischmann[2]

[1] Center for Social and Cultural Psychology, KU Leuven, Belgium
[2] ERCOMER, Utrecht University, The Netherlands

Prevailing definitions of national identities in Europe equate belonging with 'fitting in' culturally and leave culturally different minorities struggling to belong. Immigrant minority youth feel less national belonging than their majority peers, and minority youth who assimilate feel more belonging than those who (also) maintain a distinct heritage culture. This study inquires how minority youth can be culturally different from the majority group and still belong as fellow nationals. Our explanatory focus is on minority adolescents' perceptions of fit – or misfit – with the national identity. We manipulated cultural difference in a within-subject vignette experiment, and assess to what extent minority youth view (more or less) culturally different peers as real nationals. Drawing on a large random sample of 1489 Turkish or Moroccan origin minority youth (aged 12-18 years) and their classmates across 312 classes in 63 secondary schools in Belgium, we find that minority youth viewed less culturally different peers to fit the national identity better than more culturally different peers. However, our results also show that the perceived fit of *more* culturally different peers enabled national belonging of minority youth (over and above own acculturation attitudes). Moreover, perceived national fit was contingent on the perceived acceptance of cultural different peers by other nationals, and these perceptions of the minority youth in turn reflected majority peer presence along with peer norms on culture maintenance in their classroom. We conclude that the peer context can enable national belonging of minority youth through opening up the national identity to include cultural difference.

S3.3. The Psychology of Supranationalism: Ideological Correlates and Implications for EU Attitudes and post-Brexit Preferences

Linus Peitz[1], Kristof Dhont[1] & Ben Seyd[2]

[1] School of Psychology, University of Kent, UK
[2] School of Politics and International Relations, University of Kent, UK

Research shows that opposition to European integration often boils down to concerns about specific issues such as mass migration. However, the role of attitudes towards the fundamental principle behind European integration, supranational governance, has largely been ignored in past research. Introducing a new measure of supranationalism, two studies conducted in the UK (N = 336 and N = 400), investigated the socio-ideological correlates of supranationalism and the implications for EU attitudes and post-Brexit preferences. As expected, the results showed that right-wing authoritarianism (RWA, Study 1 and 2) and social dominance orientation (SDO, Study 2) predicted less support for supranationalism, controlling for national identification and economic conservatism. Furthermore, supranationalism largely accounted for the relation between socio-ideological attitudes and EU attitudes over and above established factors, such as immigrant threat. Study 2 also demonstrated the role of supranationalism in the relations of RWA and SDO with preferences to prioritise the discontinuation of cooperating with the EU and regaining national control as outcome of the Brexit negotiations. These findings highlight the key role of principled opposition to supranational governance in driving Euroscepticism and post-Brexit preferences.

S3.4. Explaining inter-ethnic friendship choices of Turkish-Belgian students in a University campus

F. Zehra Colak[1] & Ides Nicaies[1]

[1] Psychology and Educational Sciences Department, KU Leuven, Belgium

Drawing on findings from qualitative interviews with Turkish-Belgian (of Turkish descent) university students studying at KU Leuven (University of Leuven) in Belgium, this article explores the factors which Turkish-Belgian students perceive to be influencing the development of friendships with Flemish students in a campus environment and aims to understand the differences in orientations of students. Thematic analysis of the findings reveals that propinquity, individual similarities, perceived differences in cultural values, self-disclosure and receptivity predominantly determined the interethnic friendship choices of Turkish-Belgian university students. While students with more interethnic friends often referred to the role of individual similarities and receptivity, those primarily opting for ethnic homophily underlined that different cultural values and challenge of self-disclosure made it harder to build inter-ethnic friendships. Propinquity to ethnic or interethnic peers on campus had significant implications on the choices of students. The results are discussed in light of opportunities and preferences framework.

S3.5. Postive and negative intergroup contact: interaction not asymmetry

Katrín Árnadóttir[1], Simon Lolliot[2], Rupert Brown[3], & Miles Hewstone[4]

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[2] University of British Columbia, Canada (slolliot@psych.ubc.ca)
[3] University of Sussex, UK (r.brown@sussex.ac.uk)
[4] University of Oxford, UK (miles.hewstone@psy.ox.ac.uk)

This research reports a novel investigation into the comparative effects of positive and negative direct and extended intergroup contact on intergroup orientations. It tested the generality of the positive-negative asymmetry effect in Iceland, among the host majority (N = 357) and Polish minority (N = 101), Iceland's largest immigrant group. Little evidence of asymmetry was observed: the beneficial effects of positive contact were mostly as strong as the detrimental effects of negative contact, for both direct and extended contact. However, evidence was found for alternative interaction models in which positive contact buffers the negative effects of negative contact, and negative contact enhances the benefits of positive contact. These interaction effects were found only for direct contact and principally in the majority group. However, in the minority sample tentative evidence of a more troubling pattern was found whereby negative contact reduces the beneficial effects of positive contact, and positive contact enhances the detrimental effects of negative contact. It appeared that differential group salience elicited by positive and negative contact could contribute to the explanation of the observed effects, at least in the majority sample. We believe that while further research with larger minority samples is needed, the results give grounds for continued optimism about the contribution that positive intergroup contact can make to the reduction of prejudice. Crucially, we conclude that considering the interplay between positive and negative intergroup contact is critical for understanding contact effects and their consequences for intergroup relations.

S4 - Symposium

10u40-12u00

Room D

Vision by interaction: Parallel processing and integration in the dorsal and ventral streams

Organizer and chair: Gilles Vannuscorps[1]

[1] Psychological Sciences Research Institute, Faculty of Psychology and Educational Sciences, Université Catholique de Louvain, Belgium

The primate brain processes incoming visual information in occipitotemporal "ventral stream" areas specialized in shape recognition, and occipitoparietal "dorsal" stream areas crucial for spatial vision and visuo-motor control. Most research so far has been devoted to characterizing the computations mediated by each stream. Yet, rather than perceiving the world as a disjointed collection of ventral-shape and dorsal-spatial attributes, we most often experience a single unified percept. The aim of the symposium is to showcase recent findings from various groups, perspectives and methods on how the dorsal and ventral visual streams interact to provide us with unitary visual experiences. Speakers will discuss the contribution of the ventral stream to visuo-motor control, the contribution of the dorsal stream to action perception and 3-dimensional vision and share their hypotheses about the neuronal foundation of interstream integration.

S4.1. Illusory size interacts with current hand posture during prospective action judgements

Laurie Geers[1], Mauro Pesenti[1,2] & Michael Andres[1,2]

[1] *Psychological Science Research Institute, Université catholique de Louvain*
[2] *Institute of Neuroscience, Université catholique de Louvain*

How does the eye guide the hand in an ever-changing world? The two visual system model proposes that visually-guided actions require the computation of the absolute metrics of an object, with respect to the observer and without being influenced by the visual context. Accordingly, actions should be immune to visual illusions arising from a size contrast between a target and context elements. However, experimental studies revealed discrepant results that remain difficult to reconcile. Proprioceptive and visual information of the acting hand have been identified as potential confounds since they may be exploited to correct the illusory effect. To overcome the issue, we investigated the effect of a visual illusion in which the relative size of a circle varies according to the size of surrounding circles (i.e., The Ebbinghaus illusion) on prospective action judgements. Participants had to decide whether they thought to be able to grasp the central circle of an Ebbinghaus display between their index finger and thumb without moving their hands. A control group had to judge the size of the central circle relative to a standard. Experiment 1 showed that the illusion affected perceptual and grasping judgements similarly. We investigated further the interaction between the visual illusion and grip aperture representation by examining the effect of concurrent motor tasks on grasping judgements. We showed that participants underestimated their grasping ability when they were squeezing a ball between their index finger and thumb (Experiment 2), whereas they overestimated their ability when their fingers were spread apart (Experiment 3). The illusion modulated the interference of the squeezing movement with the illusion of largeness enhancing the underestimation of one's grasping ability observed in Experiment 2. We concluded that both the visual context and the body posture influence action anticipation, which is therefore not totally immune to optical illusions.

S4.2. Functional interactions between the macaque dorsal and ventral visual pathways during three-dimensional object vision

Peter Janssen[1]

[1] Department of Neurosciences, KU Leuven, Belgium

The division of labor between the dorsal and the ventral visual stream in the primate brain has inspired numerous studies on the visual system in humans and in nonhuman primates. However, how and under which circumstances the two visual streams interact is still poorly understood. I will review evidence from anatomy, modelling, electrophysiology, electrical microstimulation, reversible inactivation and functional imaging in the macaque monkey aimed at clarifying at which levels in the hierarchy of visual areas the two streams interact, and what type of information might be exchanged between the two streams during three-dimensional (3D) object viewing. Neurons in both streams encode 3D structure from binocular disparity, synchronized activity between parietal and inferotemporal areas is present during 3D structure categorization, and clusters of 3D structure-selective neurons in parietal cortex are anatomically connected to ventral stream areas. In addition, caudal intraparietal cortex exerts a causal influence on 3D-structure related activations in more anterior parietal cortex and in inferotemporal cortex. Thus, both anatomical and functional evidence indicates that the dorsal and the ventral visual stream interact during 3D object viewing.

S4.3. Interactions between action capability and spatial perception

Martin Gareth Edwards[1*], Stéphane Grade[1], Marie Alsamour[1] and Vincenza Montedoro[1]

[1] Psy-NAPS Group, Psychological Sciences Research Institute, Université Catholique de Louvain, Belgium

Research over the last 15 years has provided a wealth of evidence supporting independent conscious perception (ventral stream) and automatic action (dorsal stream) cognitive processes. However, independent research over the same period suggests that actions (and body representations) can influence our perception of space. For example, having an amputated limb can cause biased attention towards the side of the body with more action capability. In the research presented here, I discuss three recent experiments. In the first experiment, we used virtual reality to manipulate action capability, and showed that the manipulation influenced space perception. In the second study, we again manipulated action capability, but this time using an interactive robot who made participant's actions more difficult. This again caused a change in the perception of space. Finally, we measured spatial perception in patients with hemiparesis, and showed lateralized biases in space perception. These research findings will be discussed in terms of how action capability influence space perception, implying interactions between perception and action cognitive processes.

S4.4. Direct interactions between action and perception when lifting objects

Marco Davare[1]

[1] Department of Movement Sciences, Faculty of Movement and Rehabilitation Sciences, KU Leuven, Belgium

When lifting an object, the brain uses visual cues and an internal object representation to predict its weight and plan an accurate scaling of fingertip forces. In return, acting upon an object provides additional sensory feedback that enhances perceptual information about its physical properties and refines the internal object representation. In the size-weight illusion, smaller objects are perceived to be heavier than larger ones even though they weigh the same. This perceptual bias is persistent and thought to be driven by a mismatch between predicted and actual object weight. However, fingertip forces do not suffer from any biases and are appropriately scaled to the actual object weight. This separate adjustment of force scaling and illusionary perception has long been used to suggest a dissociation between the control of action and perception. Thus, perceptual estimates should not be influenced by how an object is lifted and vice-versa. Here, we provide evidence that this is not true. Firstly, in a series of behavioural experiments, we used sensorimotor memory or visual delays in virtual reality to manipulate implicitly the planning of fingertip forces when lifting the same object. We found that transient changes in force dynamics lead to persistent biases in object weight judgements. Secondly, we manipulated the perception of object features that trigger specific motor responses (i.e. affordances) while subjects had to grasp the same object in a similar way. We found that perception of object features has a sustained effect on action parameters throughout movement execution. These two sets of experiments demonstrate that neural processes underlying action and perception can influence each other and shed new light on the timing of these interactions.

S5 - Invited symposium

10u40-12u00

Room E

New insights into the role of emotion regulation in the explanation of different health outcomes

Organizers: Lien Goossens[1] & Olivier Luminet[2]
Chair: Lien Goossens[1]

[1] Faculty of Psychology and Educational Sciences, Ghent University, Belgium
[2] Psychological Sciences Research Institute, Université Catholique de Louvain, Belgium

S5.1. Heart rate variability moderates the relationship between emotional competencies and depression

Elise Batselé[1] & Carole Fantini-Hauwel[1]

[1] Université Libre de Bruxelles, Belgium

Little is known about the physiological processes underlying the relationship between Emotional Competencies (EC) and depression or anxiety. The aim of this study was to examine if resting HRV could moderate the link between EC and depression as well as anxiety. We measured resting HRV in 97 healthy participants that also completed questionnaires about EC, depression and anxiety. Moderation analyses showed that higher intrapersonal EC was associated with lower depressive symptoms and that resting HRV moderated this relationship, even after controlling for age, gender, BMI and breathing amplitude. Specifically, higher scores of depressive symptoms were only associated with lower scores of intrapersonal EC among low or mean resting HRV levels groups. Among high resting HRV level group, depressive symptoms were not significantly related to intrapersonal EC. Our study suggests that decreased and mean resting HRV could be one of the underlying physiological processes that explain the link between EC and depression.

S5.2. Because You Had a Bad Day: A More Thorough Investigation into the Role of Emotion Regulation in the Relation between Reactive Temperament and Depressive Symptoms in Youth

Marie-Lotte Van Beveren[1], Sofie Kuppens[1], Benjamin Hankin[1], & Caroline Braet[1]

[1] Ghent University, Belgium

Objectives. Negative emotionality (NE) and positive emotionality (PE) have repeatedly shown to act as vulnerability factors for youth depression. Less research examined the mechanisms through which these temperament traits may differently confer vulnerability to depression. Recent models propose emotion regulation (ER) as a key underlying mechanism.

Methods. Current study aimed to clarify the general and dynamic relations among temperament, ER, and depressive symptoms in youth using a cross-sectional and a 7-day daily-diary design. Self-reported temperament, trait ER, and symptoms were measured at baseline. ER and symptoms were assessed daily.

Results. Cross-sectional analyses revealed that NE and PE each provide unique pathways in defining basic vulnerability to depression. Daily-diary analyses showed that PE predicted trajectories of symptoms, while NE predicted trajectories of rumination. No mediation effects were found in the daily-diary study.

Conclusion. Results contribute to a more nuanced understanding of the associations between temperament, ER, and depressive symptoms in youth.

S5.3. Non-suicidal self-injury: if not to die, why would people do such a thing? An emotion regulation perspective

Glenn Kiekens[1,2]

[1] Research Group Psychiatry, Department of Neurosciences, KU Leuven, Belgium
[2] School of Psychology and Speech Pathology, Curtin University, Australia

Non-suicidal self-injury (NSSI) is a common and complex behaviour among adolescents and young adults, routinely engaged for emotion regulatory purposes. This presentation reviews the current state of the knowledge about the role of emotion regulation in NSSI. First, I will define NSSI and provide an emotion regulation framework for understanding why people self-injure. Secondly, attention will be given to how we usually study NSSI and whether measurement of emotion regulation works comparably in individuals with and without a history of NSSI. Thirdly, we will consider recent evidence into the role of emotion regulation in the maintenance of NSSI. Finally, drawing upon the Emotional Cascade Model of dysregulated behaviors, the need for future ecological momentary assessment studies will be discussed in providing knowledge into how NSSI might regulate emotion and cognition in the daily life of young people.

S5.4. Regulation of negative experiences and memory bias for comfort food: Moderation by interoceptive accuracy

Giorgia Zamariola[1], Olivier Luminet[1], & Olivier Corneille[1]

Université Catholique de Louvain, Belgium

Being socially excluded or receiving a negative feedback leads individuals to implement emotion regulation strategies to deal with their negative emotions. Some of these strategies are dysfunctional, as when searching for comfort food. In three experiments (total N = 414), we examined the moderating impact of Interoceptive Accuracy (i.e., IAcc, as measured with the heartbeat tracking task) on negative affect and memory bias towards high-calorie food following social exclusion or after receiving a negative feedback. Results from the meta-analysis combining the three studies showed a weak but significant interaction between IAcc and emotion induction condition (negative vs. control) (1) on negative affect, and (2) on a visual memory bias for food. These results support the positive role of interoception in emotion regulation and suggest that IAcc may decrease the accessibility in memory of high-calorie food, following negative experiences.

S6 - Thematic Session

10u40-12u00

Room F

Language

Chair: Steve Majerus[1]

[1] Psychology and Cognitive Neurosciences Research Unit, F.R.S-F.N.R.S, University of Liège, Belgium

S6.1. Language control and cognitive abilities in bilingual aphasia: Behavioral and brain correlates

Lize Van der Linden[1], Wouter Duyck[2], Nele Verreyt[2], Miet De Letter[3], Dimitri Hemelsoet[4], Peter Mariën[5], Patrick Santens[4], Michaël Stevens[2], Laurence Dricot[6], Adrian Ivanoiu[7], Marc-Pierre de Partz[6], & Arnaud Szmalec[1,2,6]

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[6] Institute of Neuroscience, Université catholique de Louvain, Brussels, Belgium
[7] Neurology Department, Saint Luc University Hospital, Brussels, Belgium

One of the most remarkable findings in research on bilingualism is that multiple languages are simultaneously active in the bilingual brain. But how do bilinguals select a particular language in the midst of competing languages? Investigating differential aphasia provides a unique approach to this intriguing question. Aphasia is an impairment in understanding, formulating or using verbal messages, caused by a lesion in language-related brain areas. Interestingly, the two languages are not always affected to the same degree in bilingual aphasia, known as differential aphasia. Given the assumption that bilinguals have one integrated lexicon containing word representations of both languages, it seems hard to conceive how damage to language-related brain areas could result in a better recovery of one language in particular. In two studies, we examined whether differential aphasia is due to a language control impairment and how this affects non-linguistic cognitive control. We assessed language control using cognates in different lexical decision tasks, and non-linguistic control with a flanker task. We also examined functional connectivity between language

control and language processing brain networks. We found preserved cognate effects in a lexical decision task requiring little language control, indicating intact functionality (and cross-language interactivity) of word representations. In contrast, we found diminished language and non-linguistic control abilities, suggesting a domain-general control impairment. Consistent with the behavioral data, we also observed altered connectivity between control and language processing brain networks. Altogether, these results provide evidence that language control and non-linguistic control are overlapping abilities that are impaired in differential aphasia.

S6.2. Development of shared syntactic representations in second language learning: evidence from syntactic priming

Merel Muylle[1], Sarah Bernolet[2], & Rob Hartsuiker[1]

[1] *Ghent University, Belgium*
[2] *University of Antwerp, Belgium*

Two longitudinal studies investigated the development of syntactic representations in late second language (L2) learners by means of syntactic priming in an artificial language (AL) paradigm. Several studies found cross-linguistic syntactic priming in L2 learners, suggesting that they have shared syntactic representations across languages. But how are these shared representations established? Hartsuiker and Bernolet's (2017) theory claims that 1) L2 syntactic representations evolve gradually from item- specific to more abstract, and that 2) over time these representations are integrated with available L1 presentations. We tested predictions of this model with native Dutch speakers, who acquired the AL in the lab by means of a battery of tasks, the last of which was a sentence priming task. The AL syntax resembled the Dutch syntax. We manipulated the relation between prime and target to investigate whether syntactic priming occurred in conditions with meaning overlap (item-specific) and without overlap (abstract). In Study 1, participants responded only in the AL, but in Study 2, where the AL was more difficult, the target sentence could also be in Dutch. In both studies, there was a large effect of item-specific priming, but a smaller effect of more abstract priming on Day 1. On Days 2-5, however, the priming effect became smaller and there was a ceiling effect in learning in Study 1, which became smaller in Study 2. These findings suggest that at least for structures that are very similar between languages, both item-specific representations and more abstract representations are established very early during language learning.

S6.3. Dissociating explicit memory from implicit learning in structural priming

Chi Zhang[1], Sarah Bernolet[2], Robert J. Hartsuiker[1]

[1] Ghent University
[2] University of Antwerp

Structural priming refers to the tendency for speakers to repeat previously experienced sentence structures. Much research posits a multifactorial account by which an implicit learning process and an explicit memory related process jointly contribute to structural priming. One way to test this hybrid account is to dissociate the facilitation effect of lexical repetition on structural priming (i.e., lexical boost), which was argued to be an explicit memory effect, from the abstract structural priming effect, which arguably reflects implicit learning. The current study furthers this argument by examining the effect of structural priming and lexical boost over memory-load interference between prime and target. Forty participants were paired with a scripted confederate to take turns to complete picture description task and arithmetic problem solving task (priming experiment), and forty further participants performed similar tasks but were instructed to memorize and reuse the sentence structures that the confederate formulated (memory experiment). The prime condition, lexical repetition and the difficulty of the interfering task were manipulated. The effect of structural priming and lexical boost were found in the priming experiment, which corresponded to the same pattern in the memory experiment. The priming effect negatively correlated with the trial number, which can be taken as evidence of implicit learning. Although no main effect of task difficulty was found, the priming effect negatively correlated with the reaction time of problem solving, implying a memory-load effect on explicit memory of sentence structure. Taken together, the findings substantiated that explicit memory and implicit learning jointly affect structural priming.

S6.4. What did I just hear? Phonological similarity as an index of short-term memory precision for words and nonwords

Marion Bouffier[1,2] & Steve Majerus[1,2]

[1]Université de Liège, Liège, Belgium
[2]Fond de la Recherche Scientifique, F.R.S.-FNRS, Belgium

The concept of short-term memory (STM) precision has been defined as the resolution at which items are maintained and represented in STM (Joseph et al., 2015). It has to be distinguished from STM capacity, which refers to the number of items that are recalled in a STM task. So far, the concept of STM precision has received very little interest in the verbal STM domain. In two studies, we assessed the sensitivity to different degrees of phonological similarity between memory and probe items as a potential index of verbal STM precision at a lexical and sublexical level. In Study 1, 60 young adults had to maintain auditory lists of 6 words. In Study 2, 20 young adults had to maintain single four-syllable nonwords. After a delay, a probe stimulus was presented, and participants had to decide whether it matched one of stimuli in the list (Study 1), or whether it matched the stimulus to-be-maintained (Study 2). For each study, negative probes showed different degrees of phonological proximity with the target. Using Bayesian ANOVA, we observed robust evidence for an influence of phonological proximity on probe recognition performance: the more similar the negative probes to the target item, the higher the rate of false recognition and the slower the response times. Critically, we observed significant interindividual variability in sensitivity to phonological proximity. Overall, the variation of target-probe phonological similarity along a continuum may be a promising experimental procedure for studying the concept of STM precision in the verbal domain.

S6.5. Semantic effects in verbal short-term memory: where do they come from?

Benjamin Kowialiewski[1,2] & Steve Majerus[1,2]

[1] University of Liège, Belgium
[2] Fund for Scientific Research, F.R.S.-FNRS, Belgium

Verbal short-term memory (VSTM) performance is affected by semantic knowledge: higher VSTM span is observed for items showing similar versus dissimilar semantic features (semantic similarity effect). Similarly, high imageability words are better recalled than low imageability words (imageability effect). Language-based models of VSTM predict that these semantic effects occur automatically via interactive activation within the linguistic system, in absence of attentional control. We directly tested this prediction by manipulating semantic effects under interference conditions preventing attentional control mechanisms. Participants performed a VSTM task in which they were invited to memorize six-word lists that they had to recall either directly (direct recall condition) or after a backward counting interfering task (interference condition). Experiment 1 assessed the semantic similarity effect, while Experiments 2 and 3 assessed the imageability effect. In Experiment 1, we observed a very strong effect of semantic similarity. At the same time, the magnitude of this effect was amplified in the interference condition. In Experiments 2 and 3, robust effects of word imageability were observed. However, these effects either did not change between the direct recall and interference conditions, or even diminished in the interference condition. These results show that variables of semantic similarity and imageability are affected in opposing manners by VSTM task interference. Semantic similarity appears to arise from automatic interactive activation within the linguistic system, as predicted by language-based models of VSTM, while the imageability effect is maximally expressed in conditions of attentional control.

Abstracts

Parallel Sessions 7-12

12u50-14u10

S7 - Invited symposium

12u50-14u10

Room A

Primary health care in children

Organizers: Caroline Braet[1], Alexis Dewaele[2], & Geert Crombez[2]
Chair: Caroline Braet[1]

[1] Department of Developmental, Personality and Social Psychology, Ghent University, Belgium
[2] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

S7.1. Early detection of autism spectrum disorder: approaches, pitfalls and benefits

Herbert Roeyers[1]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

Growing evidence suggests that very early intervention is beneficial for infants and toddler with autism spectrum disorder (ASD). Whether this implies that it is imperative to conduct early screening for ASD at the population level, is however highly debated nowadays. We present an overview of the different screening approaches for ASD as well as of the advantages and disadvantages of a so-called Level 1 screening in primary health care. We complement the international findings on early detection with the results of our own longitudinal studies in Flanders, both with children from the general population as well as with children at increased risk for developing ASD: younger siblings of a child with ASD and preterm born children.

S7.2. Primary care of hard-to-manage children into the light of developmental psychology

Isabelle Roskam[1]

[1] Université Catholique de Louvain, Belgium

Hard-to-manage behaviors, i.e. agitation, emotional arousal, impulsivity, aggressiveness, opposition, are among the most common mental health problems in young children. These behaviors are however considered as normal or even beneficial in specific developmental stages, namely for autonomy or attachment purpose in early life stage. While these behaviors are expected to decrease as children grow up, they persist and increase in some of them. How can we detect children for whom prevention may be useful? What are the processes through which these behaviors remain stable or change over childhood and adolescence? Developmental psychology provides an interesting insight into these questions. Based on a the H2M (Hard-t(w)o-Manage) Children research program, a longitudinal study started in 2004, the presentation will focus on the importance of early indicators as the multi informant and multi method congruence, and predictors as executive functioning, language, attachment and parenting, in primary care of hard-to-manage children.

S7.3. The transdiagnostic role of emotion regulation for developing new interventions

Caroline Braet[1], Laura Wante[1], & Brenda Volkaert[1]

[1] Ghent University

In my presentation I will first elaborate on the role of emotion regulation strategies in explaining different psychopathology symptoms in 9 to 14 years-old young adolescents. According to recent theoretical models, psychopathology results from the specific use of maladaptive emotion regulation (ER) strategies and the lack of specific adaptive strategies. Next, I will show how we set up new rigorous research to explore the effects of learning ER strategies in early adolescents in both schoolchildren and at-risk groups. The studies were conducted with a grant of the Rode Neuzen foundation. In a first study 1 (N = 76), we examined whether young adolescents are able to use distraction and whether the effects of this strategy are similar to talking to one's mother. In a next study (N = 184), we compared the effects of different ER strategies instructions (distraction, cognitive reappraisal, acceptance, compared with using rumination). In both studies, participants received instructions on how to regulate their emotions after a standardized negative mood induction. In general, the results indicated that distraction, but also cognitive reappraisal and acceptance, had promising short-term effects on positive and negative affect in young adolescents. In a third study (N= 270), we examined the effects of a short emotion regulation training, consisting of learning emotional awareness followed by one specific ER strategy (distraction, cognitive reappraisal, acceptance or problem solving, compared with induced rumination and doing exercises). Again, results show promising effects for all adaptive ER strategies on both positive and negative affect. These findings inspired us for the development of an ER training (a) as prevention protocol for adolescents during a transition phase from primary to secondary school (N=150) (compared with controls N=150) and (b) for obese children (N=140). The first findings all suggest positive effects on the trainability of adaptive ER skills in 9 to 14 years-old schoolchildren, which is promising for the development of new (first line) intervention programs.

S7.4. Negative self-referent processing in the context of adolescent depression: First results with an emotional reversal-learning task

Eline Belmans[1], Keisuke Takano[2], & Filip Raes[1]

[1] KU Leuven, Belgium
[2] Ludwig-Maximilians-University Munich, Germany

With one-year prevalence rates of 4-5%, depression is recognized as one of the most common mental health problems in adolescence. Therefore, it is important to investigate potential vulnerability factors. Such psychopathological knowledge would be useful to screen at-risk adolescents and target those factors in prevention programs. One promising target is negative self-referent thinking: e.g., "I'm hopeless". Theories (and some preliminary empirical evidence) suggest that this negative self-referent thinking would be a mental habit, which makes it crucially difficult to stop and change (e.g., rumination). To test the underlying mechanisms of such habitual and persistent negative thoughts, we developed a decision-making task, i.e., the Emotional Reversal-Learning Task. The aim of this study is to examine whether the inability to stop negative self-referent thinking predicts future increases in depressive symptoms by using a longitudinal design. Preliminary results will be presented at the meeting.

S8 - Thematic Session

12u50-14u10

Room B

Consciousness & Cognition

Chair: Axel Cleeremans[1]

[1] Center for Research in Cognition and Neurosciences, Université Libre de Bruxelles, Belgium

S8.1. The Aha! moment: Is insight graded or sudden?

Hans Stuyck[1, 2], Axel Cleeremans[2] & Eva Van den Bussche Eva[1]

[1] Department of Experimental and Applied Psychology, Vrije Universiteit Brussel, Belgium
[2] Center for Research in Cognition and Neurosciences, Université Libre de Bruxelles, Belgium

What is the shape of insight — the familiar Aha! moment when clear understanding breaks through to consciousness after a protracted period of confused search? While it is generally accepted that unconscious processing is involved prior to insight, extant theories disagree about the mechanisms that drive it. On the one hand the "special-process" view (Ohlsson, 1992) assumes a rapid solution formation immediately preceding the Aha! moment. On the other hand the "business-as-usual" view (Fleck & Weisberg, 2004, 2013) proposes a gradual build-up of information from implicit to explicit until the solution is reached. To address the challenge of distinguishing between these two views, we asked 20 participants to carry out 70 word puzzles (i.e., the Compound Remote Associates Test) that can be solved with or without insight. To assess the accessibility of solution information early in the problem solving phase, participants rated the subjective difficulty of the word puzzles two seconds after receiving each puzzle. Our results show that insight solutions are qualitatively different from non-insight solutions. Specifically, insight solutions are found faster, are more often correct and receive higher confidence ratings. Crucially, word puzzles solved with insight were rated as being less difficult early in the problem solving phase. This suggests that participants already have, on an implicit level, access to partial solution information with regard to word puzzles that would be solved with insight (i.e., a less difficult rating). In sum, these observations support a gradual, rather than a sudden, build-up of information prior to an Aha! moment.

S8.2. Post-decisional evidence is ignored in confidence judgments

Kobe Desender[1,2], Niklas Wilming[1], Tobias Donner[1], & Tom Verguts[2]

[1] Department of Neurophysiology and Pathophysiology, University Medical Center Hamburg-Eppendorf, Germany

[2] Department of Experimental Psychology, Ghent University, Belgium

Human observers can provide very precise confidence judgments of their own performance. Such expression of metacognition poses a challenge for the standard drift diffusion model of decision making, according to which evidence (i.e., and thus confidence) reaches a fixed level at the time of responding. Different solutions have been proposed: confidence has been modelled as a function of both evidence and decision time (decision model of confidence) and it has been proposed that confidence has a post-decisional locus (post-decision model of confidence). In the latter, evidence continues to accumulate following the decision to inform confidence judgments. Here, we integrated both frameworks into a single model and derived predictions by manipulating the variability of sensory input. The model predicted that highly variable sensory input has a positive influence on confidence when confidence is interrogated at the time of response (decisional locus), and a negative influence when confidence is interrogated after the response (post-decisional locus). These predictions were tested in a random dot discrimination task, in which the variability of the coherently moving dots was manipulated. Consistent with the predictions, when observers provided their decision and confidence judgments at the same time (in a single response), observers were more confident when the sensory input was highly variable. Contrary to the predictions, however, when confidence judgments were queried later in time, we still observed a positive effect of variability on confidence. These results are consistent with a decisional locus of confidence, whereas post-decisional evidence seems to be ignored.

S8.3. Brain, behavior and cognitive interplay in disorders of consciousness: A multiple case study

Charlène Aubinet[1], Lesley Murphy[2], Mohamed Ali Bahri[3], Stephen Karl Larroque[1], Helena Cassol[1], Jitka Annen[1], Manon Carrière[1], Sarah Wannez[1], Aurore Thibaut[1], Steven Laureys[1], & Olivia Gosseries[1]

[1] Coma Science Group, GIGA Consciousness and Neurology Department, University and University Hospital of Liège, Liège, Belgium

[2] Department for Neuro and Clinical Health Psychology, St George's University Hospital, London, UK

[3] GIGA-Cyclotron Research Center In Vivo Imaging, University of Liège, Belgium

Patients with prolonged disorders of consciousness (DoC) after severe brain injury may present residual behavioral and cognitive functions. Yet the bedside assessment of these functions is compromised by patients' multiple impairments. Standardized behavioral scales such as the Coma Recovery Scale-Revised (CRS-R) have been developed to diagnose DoC, but there is also a need for neuropsychological measurement in these patients. The Cognitive Assessment by Visual Election (CAVE) was therefore recently created. In this study, we describe five patients in minimally conscious state (MCS) or emerging from the MCS (EMCS). Their cognitive profiles, derived from the CRS-R and CAVE, are presented alongside their neuroimaging results using structural and functional magnetic resonance imaging (MRI) and fluorodeoxyglucose positron emission tomography (FDG-PET). Scores on the CAVE decreased along with the CRS-R total score, establishing a consistent behavioral/cognitive profile for each patient. Out of these five cases, the one with highest CRS-R and CAVE performance had fewer and smaller brain lesions, as well as less extended hypometabolism. All patients showed brain structure and function results that were consistent with their behavioral/cognitive profile as based on previous literature. For instance, the presence of visual and motor residual functions was respectively associated with a relative preservation of occipital and motor cortex/cerebellum metabolism. Moreover, residual language comprehension skills were found in the presence of preserved temporal and angular cortex

metabolism. All patients also presented structural impairment of hippocampus, suggesting the presence of memory impairments. Our results suggest that brain-behavior relationships might be observed even in severely brain-injured patients and they highlight the importance to develop new tools to assess residual cognition and language in MCS and EMCS patients. Indeed, a better characterization of their cognitive profile will be helpful in preparation of rehabilitation programs and daily routines.

S8.4. Are memories of near-death experiences self-defining?

Helena Cassol[1], Arnaud D'Argembeau[2], Vanessa Charland-Verville[1], Steven Laureys[1], & Charlotte Martial[1]

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[2] University of Liège, Department of Psychology, Psychology and Neuroscience of Cognition Research Unit, Liège, Belgium

Introduction. Memories of near-death experiences (NDEs) are characterized by a rich phenomenology and appear to be firmly anchored. It has been proposed that this phenomenology could be explained by the significance of NDEs for personal identity; however, the centrality of this event to individuals' (so-called "experiencers") lives and identities remains unexplored.
Objectives. Given the significance and consequentiality of NDEs, this study aimed at determining whether memories of NDEs could be considered as a particular type of autobiographical memories, referred to as "Self-Defining Memories" (SDMs), which are central to one's self-understanding. Furthermore, we intended to explore if NDEs memories are more central to experiencers' identities and life stories as compared to other SDMs.
Methods. We recruited 47 volunteers who had experienced a NDE (identified using the Greyson NDE scale) in a life threatening situation. Volunteers were invited to complete a task asking to describe two SDMs and, for each of them, they completed the Centrality of Event Scale (CES).
Results. The majority of volunteers (60%) recalled their NDE among the reported SDMs. The memory of the NDE scored significantly higher on the CES as compared to the other SDM, showing that this experience was considered as being particularly central to their identity. Furthermore, we found that volunteers who described more intense NDEs memories also considered them as more central to their identities.
Conclusions. The self-defining status of NDEs memories confirms that they are central to experiencers' identities and highlights the importance for clinicians to facilitate their integration within the self.

S8.5. Neural correlates of cognitive control functioning in individuals with insomnia disorder

Charlotte Muscarella[1], Olivier Mairesse[1,2,3], Gethin Hughes[4], Daniel Neu[2], & Eva Van den Bussche[1]

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Individuals with insomnia disorder (ID) commonly report associated complaints of cognitive functioning. Conversely, both behavioral and neurological evidence supporting this notion of cognitive impairments in ID remain remarkably scarce and inconclusive. To investigate this, the current study used EEG to temporally dissociate the dynamic interplay of proactive (i.e., maintenance and updating of task-relevant information) and reactive control (i.e., interference monitoring and resolution). Using the AX-Continuous Performance Task (AX-CPT), participants responded with a target response to a probe-stimulus when it was preceded by a specific cue. The results indicate that compared with good sleeper controls (GSC), ID show an impaired proactive recruitment of cognitive control (reflected by the P3b and the contingent negative variation components of the ERP). These findings provide reliable evidence for neurological impairments in cognitive control functioning in ID and contribute to a better understanding of the discrepancy between the commonly reported cognitive impairments in ID and the scarce objective evidence for these cognitive complaints.

S9 - Invited symposium

12u50-14u10

Room C

Advances in intergroup contact: New discoveries and challenges

Organizers: Kristof Dhont[1] & Jasper Van Assche[2]
Chair: Jasper Van Assche[2]

1 School of Psychology, Keynes College, University of Kent, UK
2 Faculty of Psychology and Educational Sciences, Ghent University, Belgium

S9.1. Did the 'migration crisis' affect evaluations of unrelated minorities? A three-wave longitudinal study on attitudes towards ethnic groups as a function of intergroup contact with asylum seekers (and vice versa) in the neighborhood of a newly set up initial reception center in Germany

Patrick F. Kotzur[1,2] & Ulrich Wagner[1]

[1] University of Marburg, Germany
[2] University of Osnabrück, Germany

The heightened numbers of asylum seekers arriving in Germany 2015 may not only have affected intergroup relations between German-borns and asylum seekers, but also intergroup relations between German-borns and other minorities (and vice versa). Firstly, contact theory and the secondary transfer hypothesis propose that positive intergroup contact experiences with asylum seekers ameliorate attitudes towards secondary groups via ameliorating attitudes towards asylum seekers. Threat theory and the secondary transfer hypothesis suggests that negative contact may have the opposite effect. Secondly, attitudes towards secondary groups may generalize to attitudes towards asylum seekers, which in turn affect the frequency and valence of interactions with this group. In the present study, we report empirical findings and discuss implications of a three-wave longitudinal field study conducted between April 2015 and March 2016 on secondary transfer effects of positive and negative contact with asylum seekers on attitudes towards German repatriates from Russia, Sinti and Roma, and Turks living in Germany, and vice versa. Participants were German-born randomly selected locals living in the neighborhood of a recently opened initial reception centre (N_{T1}=120) in Hesse, Germany. Implications regarding the interweaving of intergroup relations between multiple social groups and the impact of the migration crisis are discussed.

S9.2. Intergroup Contact and Solidarity-based Collective Action: The Role of Affective and Identity-based Processes

Zafer Ozkan[1], Kristof Dhont[1], & Dominic Abrams[1]

[1] University of Kent, UK

Recent economic and political conflicts have caused a rapid increase in migrant flows across the globe, with Europe currently experiencing one of the most pertinent refugee crises since World War II. The UN Refugee Agency review (UNHRC, 2015) estimated that approximately 12.4 million refugees have left their country of origin due to recent conflicts in 2015. This migration crisis has led to fierce tension between groups of refugees and members of the host countries, with many European citizens perceiving immigrants as a threat to their cultural values and political and economic system. Yet, numerous others decide to help refugees by donating money, providing food or clothes, or participating in solidarity demonstrations. The situational and psychological factors associated with support for collective action in solidarity with immigrants are, however, poorly understood. Integrating insights from contact and collective action research, this research project investigated the differential effects of positive and negative intergroup contact on solidarity-based collective action intentions among members of majority groups. Furthermore, we tested the role of affective and identity-based processes as psychological processes explaining the association between intergroup contact and support for solidarity-based collective action. We tested these relationships with two cross-sectional (from Greece and Turkey), and one longitudinal study with three time points (from the UK). Positive contact predicted more solidarity-based collective action while negative contact did not have any effect. Outgroup identification and empathy mediated the relationship from positive contact to collective action. Anger with injustices and threat predicted collective action but did not have longitudinal mediation effects.

S9.3. Equality revisited: A cultural meta-analysis of intergroup contact and prejudice

Judit Kende[1,2], Karen Phalet[1], Wim Van den Noortgate[1], Aycan Kara[3], & Ronald Fischer[4]

[1] KU Leuven, Belgium
[2] University of Amsterdam, The Netherlands
[3] Indiana University Southeast, USA
[4] Victoria University of Wellington, New Zealand

Across cultures, intergroup contact – interpersonal interaction with out-group members – is associated with less prejudice (Pettigrew & Tropp, 2013). Contact research was criticized, however, for bypassing intergroup inequality in the wider society. We propose a cultural psychology approach grounding people's contact experiences in culturally afforded ways of relating to out-groups. Extending Allport's (1954) equal-status hypothesis to the culture level, we hypothesized that the contact-prejudice association would be stronger in egalitarian cultures and weaker in more hierarchical cultures. To test this hypothesis, we revisited Pettigrew and Tropp's (2005, 2006) influential meta-analysis and augmented it with culture-level measures of equality and hierarchy values. Our meta-analysis of intergroup contact and prejudice in 660 samples across 36 cultures suggested that egalitarianism was related to stronger contact-prejudice associations. Cultural hierarchy values and social-dominance orientation corresponded with weaker contact-prejudice associations. Cultures of equality made a difference over and above equal status in the contact situation.

S9.4. Does contact work under threat?

Jasper Van Assche[1], Kristof Dhont[2], Hermann Swart[3], & Miles Hewstone[4]

[1] Ghent University, Belgium
[2] University of Kent, UK
[3] Stellenbosch University, South-Africa
[4] University of Oxford, UK

Across 5 cross-sectional and 4 longitudinal national and international datasets, we examine whether the beneficial effects of intergroup contact exist for everyone, or whether they depend upon perceived levels of (outgroup) threat. Specifically, a crucial test of intergroup contact theory would require that the slopes of the contact effects are significant and positive, even among those individuals who perceive a great deal of threat. In 7 of those samples, we investigate contact effects among ethnic-cultural minority members as well; and in 2 of those datasets, we also examine the conditional (negative) effects of negative intergroup contact. Additionally, in 5 samples, we test the role of norms and diversity beliefs as alternative moderators for intergroup contact effects. Our findings are embedded within the growing body of intergroup contact literature and are discussed in light of the ongoing public and political debates regarding the diversification of contemporary Western societies.

S10 - Symposium

12u50-14u10

Room D

Neuromodulation of the prefrontal brain area: Scientific findings and critical reflections

Organizers: Marie-Anne Vanderhasselt[1,2], Alvaro Sanchez[3], Elisa Schroder[4,5], Jens Allaert[1,2], & Sara De Witte[1,2]
Chair: Marie-Anne Vanderhasselt[1,2]

[1] Department of Psychiatry and Medical Psychology, Ghent University, Belgium
[2] Department of Experimental Clinical and Health Psychology, Ghent University, Belgium
[3] Complutense University of Madrid, Spain
[4] Laboratory of Medical Psychology and Addictology, CHU Brugmann, Université Libre de Bruxelles, Belgium
[5] Neuroscience Institute, Université Libre de Bruxelles, Belgium

Transcranial direct current stimulation (tDCS) is a non-invasive neuromodulation technique that is easy-to-use with a reliable sham (placebo) procedure. tDCS studies have shown that anodal stimulation increases underlying neuronal activity, and thereby modulates neural circuitries underlying cognitive and emotional processes, both in healthy volunteers and (sub)clinical populations. In this symposium, we will shed our light on novel research findings using tDCS, looking at different dependent variables (attentional control (presentation 1) and voluntary cognitive processes (presentation 2) for emotional information) in healthy volunteers. Moreover, speaker 3 will present her results on cognitive control in a subclinical population. We will finish the symposium (presentation

4) with a critical refection about the effects of tDCS on the underlying neural circuitries, including propositions and suggestions for future researchers in the field of neuromodulation.

S10.1. Neurocognitive mechanisms behind emotional attention: Inverse effects of tDCS over the left and right DLPC on gaze disengagement from emotional faces

Alvaro Sanchez[1,2], Marie-Anne Vanderhasselt[1], Jens Allaert[1], Chris Baeken[1], & Rudi De Raedt[1]

[1] Ghent University, Belgium
[2] Complutense University of Madrid, Spain

Background: Attention to relevant emotional information in the environment is an important process related to vulnerability and resilience for mood and anxiety disorders. Current research aims to clarify the neural substrates of emotional attention processes involved in the development and maintenance of affective disorders. Attention impairments implicated in emotional dysregulation are related to right over left hemisphere asymmetries in the dorsolateral prefrontal cortex (i.e., DLPFC). In the present study, the effects of left and right dorsolateral prefrontal cortex (i.e., DLPFC) stimulation on attentional mechanisms of emotional processing were tested and contrasted.

Methods: A sample of fifty-four healthy participants received 20 minutes of active and sham anodal transcranial direct current stimulation (i.e., tDCS) either of the left (n= 27) or of the right DLPFC (n= 27) on two separate days. The anode electrode was placed over the left or the right DLPFC, the cathode over the corresponding contra lateral supraorbital area. After each neurostimulation session, participants completed an eye-tracking task assessing direct processes of attentional engagement towards and attentional disengagement away from emotional faces (happy, disgusted and sad expressions).

Results: Compared to sham, active tDCS over the left DLPFC led to faster gaze disengagement (mean decrease= 0.24 seconds), whereas active tDCS over the right DLPFC led to slower gaze disengagement from emotional faces (mean increase= 0.33 seconds), $F(1,52) = 14.27$, $p = .001$, $\eta_p^2 = .22$. Between-group comparisons showed that such inverse change patterns were significantly

different and generalized for all types of emotion, $F(1,52) = 14.27$, $p = .001$, $\eta_p^2 = .22$.

Conclusions: Our findings support a lateralized role of left and right DLPFC activity in enhancing/worsening the top-down regulation of emotional attention processing. These results support the rationale of new therapies for affective disorders aimed to increase the activation of the left over the right DLPFC in combination with attentional control training, and identify specific target attention mechanisms to be trained.

S10.2. Inverse effects of tDCS over the left and right DLPC on voluntary effortful emotional processing: a pupillometry study

Jens Allaert[1,2], Alvaro Sanchez[3], Rudi De Raedt[2], Marie-Anne Vanderhasselt[1,2]

[1] Ghent University, Ghent Experimental Psychiatry (GHEP) lab, Belgium
[2] Ghent University, Department of Experimental Clinical and Health Psychology, Belgium
[3] Universidad Complutense de Madrid, Department of Clinical Psychology, Madrid, Spain

Background: Past research has suggested that exerted emotion regulatory processes during the anticipation of an emotional stimulus contribute to more efficient regulation when confronted with this stimulus. The Dorsolateral prefrontal cortex (DLPFC) has been widely implicated in emotion regulatory processes, although research is lacking that investigates the functional lateralization of the DLPFC in regard to emotion regulatory processes, both during the confrontation with an emotion eliciting stimulus, and the anticipation thereof. The aim of the present study was to investigate, by using transcranial direct current stimulation (tDCS), the functional lateralization of the DLPFC in regard to voluntary effortful emotional processing during the anticipation of and confrontation with emotional stimuli.

Methods: Forty-eight subjects received 20 minutes of both active and sham (on separate days) anodal tDCS over either the left (n = 24) or right (n = 24) DLPFC, with the cathode electrode placed over the contralateral supraorbital area. After stimulation, subjects' pupillary dilation responses (PD; i.e., a physiological marker for effortful processing) were recorded while performing a natural viewing task in which negative and positive emotional pictures were presented, each preceded by an informative cue indicating the valence of the upcoming stimulus.

Results: Active tDCS over the left DLPFC (compared to sham) was associated with increased PD when confronted with negative emotional pictures, whereas active tDCS over the right DLPFC (compared to sham) was associated with decreased

PD when confronted with emotional pictures, irrespective of emotional valence. No effects were found during the anticipation phase.

Conclusions: The current findings suggest a lateralized role of left and right DLPFC activity in increasing/decreasing voluntary effortful emotional processing. Moreover, the results suggest that the left DLPFC contributes to a valence specific mode of effortful emotional processing, whereas the right DLPFC contributes to a valence aspecific mode of effortful emotional processing.

S10.3. Impact of a tDCS session over the prefrontral dorsolateral cortex on proactive vs reactive inhibitory control: an ERP study on hazardous drinkers

Elisa Schröder[1] & Salvatore Campanella[2]

[1] Laboratory of Medical Psychology and Addictology, CHU Brugmann, ULB, Belgium
[2] Neuroscience Institute, Université Libre de Bruxelles, Belgium

Inhibitory control, as defined as the ability to stop an ongoing action, has been documented as being impaired in numerous psychopathological states, specifically in substance abuses and addictions. However, inhibitory control cannot be seen as a unitary construct, and it is still unclear which are the mechanisms impacted in the field of alcohol abuse. The Dual Mechanisms of Control (DMC) offers to divide cognitive control into two kinds of strategies: proactive control (relying on the active maintenance of relevant contextual information) and reactive control (a transient control activated by external cues). Recent evidences suggest that proactive inhibitory control is specifically impacted in alcohol abusers. Those last few years, research put an accent into developing new methods to train and strengthen inhibitory control, such as the transcranial Direct Current Stimulation (tDCS). However, such studies did not, so far, accounted for the variability of the mechanisms involved in inhibitory control and mainly used tasks relying on reactive inhibitory control. Therefore, we specifically tested the differential impact of tDCS on proactive vs reactive inhibitory control. Young hazardous drinkers underwent an inhibitory version of the AX Continuous Performance Task (AX-CPT) concomitant with an Event-Related Potential (ERP) recording (T0), followed the next day by an active (n = 20) or a sham (n = 20) tDCS session of 20 min (2mA) of the Prefrontal Dorsolateral Cortex (DLPFC). The anode electrode was placed over the right DLPFC, the cathode over the corresponding contra lateral area. Immediately after the tDCS session, subjects were confronted again with the AX-CPT (T1). Behavioral performances and ERP parameters were compared between the active and the sham group. Results analysing the specific impact of tDCS on proactive vs reactive inhibitory control in young hazardous drinkers will be presented.

S10.4. Left prefrontal neuronavigated electrode localization in tDCS: 10–20 EEG system versus MRI-guided neuronavigation

Sara De Witte[1], Debby Klooster[1,2], Josefien Dedoncker[1], Romain Duprat[3], Jonathan Remue[1] and Chris Baeken[1,4]

[1] Ghent University, Belgium
[2] University of Eindhoven, The Netherlands
[3] University of Pennsylvania, USA
[4] Free University of Brussels, Belgium

Transcranial direct current stimulation (tDCS) is a non-invasive brain stimulation (NIBS) technique in which a weak direct current is applied to specifically chosen locations on the human scalp using a pair of electrodes. In neuropsychiatric research, the anode is often placed over the left dorsolateral prefrontal cortex (DLPFC), while the cathode is positioned over a contralateral cephalic region above the eye, referred-to as the supraorbital region. To locate the DLPFC, tDCS research has mostly relied on the 10–20 EEG system, but due to inter-subject brain variability this method may lack accuracy. Therefore, we compared in forty participants left DLPFC-localization via the 10-20 EEG system to MRI-guided neuronavigation. Our results showed that MRI-guided neuronavigation localizes the left DLPFC-targeting anodal electrode more laterally and posteriorly compared to the 10–20 EEG system. To illustrate that those distinct localization methods could make a difference in tDCS research (or clinical use) we provided a simulation of the electric field distribution produced by both methods in one participant, where the individual electrode positions were in close proximity to the mean electrode position across subjects. This suggests that both localization methods result in unique underlying electric field distributions, which hypothetically could result in different modulation of cognition and emotion-regulation. Considering the frequent use of tDCS in research and as a neuropsychiatric treatment further research on ideal tDCS-electrode positioning is needed, particularly to evaluate which electrode montage(s) result in the optimal electric field distribution and strength through the target neural regions.

S11 - Invited symposium

12u50-14u10

Room E

New advances on the role of psychological and social factors in adaptation to chronic illness

Organizer: Stefaan Van Damme[1]
Chair: Isabelle Merckaert[2,3]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium
[2] Faculté des Sciences Psychologiques et de l'Éducation, Université Libre de Bruxelles, Belgium
[3] Institut Jules Bordet, Brussels, Belgium

S11.1. The relationship between anxiety, dyspnea catastrophizing and neural processing of respiratory sensations in patients with chronic obstructive pulmonary disease (COPD)

Thomas Reijnders[1], Thierry Troosters[2], Wim Janssens[3], Rik Gossselink[2,] Daniel Langer[2], Paul Davenport[4], Andreas von Leupoldt[1]

[1] Health Psychology, University of Leuven, Belgium
[2] Cardiovascular and Respiratory Rehabilitation, University of Leuven, Belgium
[3] Pneumology, University of Leuven, Belgium
[4] Department of Physiological Sciences, University of Florida, Gainesville, USA

Background. COPD patients' perception of dyspnea can be negatively affected by general anxiety and dyspnea-specific fears such as dyspnea catastrophizing. In healthy subjects, respiratory-related evoked potentials (RREP) in the EEG demonstrated interactions between anxiety and neural processing of respiratory sensations. This study firstly investigated the relationship between dyspnea catastrophizing and neural processing of respiratory perception in COPD patients.

Methods. In 19 COPD patients with high (HDC) (n=10) and low (LDC) (n=9) dyspnea catastrophizing, RREPs were induced by inspiratory occlusions while 128-channel EEG was measured. The Breathlessness Catastrophizing Scale assessed dyspnea catastrophizing. Mean amplitudes for RREP components N1, P2, P3 were compared between HDC and LDC patients.

Results. Patients with HDC versus LDC showed higher P3 amplitudes ($p<0.05$). No differences were observed for N1/P2.

Discussion. Patients with HDC show modulated neural processing of respiratory sensations in P3 compared to LDC, which can be linked to motivated attention and emotional modulation of respiratory stimuli.

S11.2. Emotion regulation at the beginning of the survivorship period for breast cancer: Comparing the impact of an 8-session to a 15-session multi-component group intervention

Isabelle Merckaert[1,2], Florence Lewis[1], France Delevallez[1], Marie Caillier[3], Nicole Delvaux[1,4], Yves Libert[1,2], Aurore Liénard[2], Jean-Marie Nogaret[1,2], Jean-Louis Slachmuylder[3], Darius Razavi[1,2]

[1] Faculté des Sciences Psychologiques et de l'Éducation, Université Libre de Bruxelles, Belgium

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[3] Centre de Psycho-Oncologie, Brussels, Belgium

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Background. To compare the benefits, for emotionally distressed patients, of participating to an 8-session group intervention combining emotion regulation, exposure to fear and hypnosis or to a 15-session group intervention combining psycho-education, coping skills learning and hypnosis.

Methods. Patients were matched on distress scores and age to patients who had participated to the 15-session group intervention. Before and after group interventions, patients' emotion regulation was assessed in a dynamic emotion regulation task including relaxation exercises alternating with exposure to cancer-related issues through completing questionnaires.

Results. MANOVA time-effects showed statistically significant improvement in everyday anxiety and serenity levels, and fear of cancer recurrence.

Conclusions. The 8-session group intervention seems as effective as the 15-session group intervention in improving anxiety and fear of cancer recurrence levels. Further studies should assess the optimal combination of therapy components needed in order to further reduce reactivity to negative emotions and promote positive ones.

S11.3. Intolerance of uncertainty as a vulnerability factor for parents of childhood cancer survivors

Marie Vander Haegen[1] & Anne-Marie Etienne[1]

[1] Department of Psychology, Unit of Health Psychology, Université de Liège, Liège, Belgium

Background. Increasing survival rates in childhood cancer have yielded a growing population of parents of childhood cancer survivors (CCs). This research aimed to investigate psychological adjustment related to the vulnerability factor of intolerance of uncertainty among parents of CCs.

Methods. In a 3-month follow-up study, we assessed the intolerance of uncertainty and its maintaining factors among 61 parents of CCs.

Results. Noticeable intolerance of uncertainty rates were found. At both assessments, results showed that this factor was central in the development of anxiety, excessive worries, poor problem orientation, rumination, cognitive avoidance and positive beliefs about worry. Repeated measures (ANOVA) revealed a stability of intolerance of uncertainty over time.

Conclusions. Parents who are intolerant of uncertainty are at risk to display dysfunctional behaviours over time. Sensitizing health care professionals to the identification of this factor and its associated difficulties is essential for the implementation of efficient intervention strategies.

S11.4. Parental perceptions of injustice in the interpersonal context of chronic pain

Fleur Baert[1] & Tine Vervoort[1]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Ghent, Belgium

The role of psychosocial factors and specifically pain-related appraisals in chronic pain have been well-examined in adult and child samples. Building upon the idea that pain occurs and is shaped in an interpersonal context, previous studies have shown that parental appraisals with regard to their child's pain are crucial in understanding the child's pain experience (e.g. parental catastrophizing about child pain). An emerging line of research has identified pain-related injustice appraisals as having a significant impact upon levels of pain intensity, disability and emotional distress in (pediatric) chronic pain. Therefore, it is possible that parental (child- and self-oriented) injustice appraisals about child pain are likely also key in understanding pediatric pain experience. Two studies within this research project – a questionnaire study and a focus group study - will be discussed, examining the phenomenology of parental injustice appraisals towards their child's pain and their impact upon the child's pain experience.

S12 - Thematic Session

12u50-14u10

Room F

Close Relationships

Chair: Emmanuelle Zech[1]

[1] Person Centered Research and Training Lab, Psychological Sciences Research Institute, Université Catholique de Louvain, Belgium

S12.1. DO INFORMAL CAREGIVERS SUFFER FROM BURNOUT? A META-ANALYSIS

Pierre Gérain[1,2] & Emmanuelle Zech[2]

[1] National Funds for Scientific Research, Brussels, Belgium
[2] Person Centered Research and Training Lab, Psychological Sciences Research Institute, Université Catholique de Louvain, Belgium

Introduction: The effects of providing care to dependent close persons, i.e., informal caregiving, are growingly documented, especially its health consequences. Some research has suggested that informal caregivers could experience a form of burnout due to the chronic strain they may experience. Some studies tested such hypothesis but no synthesis of their results has been made for now.
Method: A collection of all studies comparing caregivers to non-caregivers on burnout was performed. Measures of burnout or emotional exhaustion had to be context-free or be adapted to the caregiving context. Both published and unpublished works were considered and additional information was requested when necessary.
Results: More than 7000 references were screened. Eventually, eleven studies were included in the meta-analysis. A difference of moderate size was found in burnout reactions between caregivers and non-caregivers, highlighting that caregivers were more prone to burn out than non-caregivers. Several moderators were also computed and provided interesting results.
Discussion: The present results highlight that informal caregivers are at risk of emotional exhaustion and/or burnout. They suggest that it is important to take this dimension of caregivers' well-being into account. Future research should further investigate this in order to better understand its determining factors and to develop effective interventions. Implications will be discussed such as the risk to growingly rely on informal caregivers without providing services and institutional recognition to support them.

S12.2. LIVING UP TO EXPECTATIONS? FEELING PRESSURE TO BE A PERFECT MOTHER RELATES TO HIGHER PARENTAL BURNOUT AND LOWER CAREER AMBITIONS

Loes Meeussen[1] & Colette Van Laar[1]

[1] Center for Social and Cultural Psychology, KU Leuven, Belgium

Parenthood is perceived as one of the great milestones in life. For women especially, societies prescribe women achieve womanhood by becoming a 'good' mother. To be a good mother, women have to live up to intensive mothering norms: sacrificing own needs and fully devoting to their children. These expectations may have severe costs for today's mothers. Trying to live up to such expectations in combination with a career is difficult, and failure may lead to social penalties and psychological costs. In this presentation, we outline how pressure towards perfect mothering is related to mothers' affective regulation such as feelings of stress, as well as to mothers' cognitive and behavioral regulation, which may lead to parental burnout. Moreover, we outline how pressure towards perfect mothering can spill-over into women's work outcomes. We found that working mothers' (N=169) experienced pressure to be a perfect mother is related to parental burnout, mediated by parental stress, a cognitive prevention focus avoiding mistakes, and maternal gatekeeping behaviors taking over family tasks from one's partner. Moreover, we showed that mothers with higher experienced pressure towards perfect mothering reported lower career ambitions, mediated by lower work-family balance experiences. Outlining the mechanisms through which social expectations of motherhood relate to family and work outcomes contributes to new insights into reducing parenthood hardships as well as gender inequalities in work and family domains.

S12.3. THE INTERPLAY BETWEEN DAILY DISTRESS AND SUPPORT IN PARENTING: A DYADIC PERSPECTIVE

Aurélie Gillis[1] & Isabelle Roskam[1]

[1] Institut de Recherche en Sciences Psychologiques, Université Catholique de Louvain, Belgium

Introduction: Parenting is considered as one of the most rewarding roles in adult life. But the experience of parenting can be stressful and the demands associated with the role of parenting may involve distress and/or discomfort. Hopefully, parental distress can be compensated by protective factors like parental support. While the majority of previous studies were based on an inter-individual and/or a cross-sectional approach of distress and support in parenting, the current study aims to explore the dynamic relationships between daily distress and support in parenting and their intra-individual and dyadic evolution by using an intensive longitudinal method. Method: The dynamic relationships between daily distress and support were tested in a community-sample of 97 heterosexual couples. The method is based on an intensive longitudinal design encompassing 5 waves of data collection, as well as on a multi informant design where the mother and the father completed questionnaires once a day over five consecutive days. Our statistical model used a three-level multilevel modeling framework. Results: Analyses revealed that there was a dyadic adaptation between the two partners at an intra-individual level (level 1) but also at an inter-individuel level (level 2). Results highlighted a significant positive association between distress and support in parenting at level 1 and level 2. No effect of gender and couple's characteristics (level 3) were found. The results will be discussed for their research and clinical implications.

S12.4. ATTITUDES TOWARD DATING VIOLENCE AMONG ADOLESCENTS AND EMERGING ADULTS

Audrey Courtain[1] & Fabienne Glowacz[1]

Service de Psychologie clinique de la délinquance,
des inadaptations sociales et des processus d'insertion; Unité de Recherche 'ARCh'
Adaptation, Résilience et Changement; University of Liège, Belgium

Background: Adolescents and emerging adults can experience psychological, physical or sexual violence in their romantic relationships. The dating violence (DV) phenomenon encourages the study of attitudes toward DV among youths who perpetrate and/or sustain it. Method: A sample of 1014 adolescents and emerging adults (Mean age: 18.9, 69.2% females) was administered self-reported questionnaires investigating DV (a non-conflict related version of the Conflict in Adolescent Dating Relationship Inventory, Wolfe et al., 2001) and attitudes toward DV (Attitudes Toward Dating Violence Scale, Price et al., 1999). Results: Girls show higher rates of physical DV perpetration than boys, and boys show higher rates of sexual DV perpetration, relational DV perpetration as well as relational DV victimization than girls. DV and attitudes toward DV are associated. Male respondents show higher tolerance toward DV than female respondents do. We see gendered attitudes toward DV regarding the sex of the perpetrator/victim. We note patterns of multiperpetration, multivictimization and multi(in)tolerance. Conclusion: Our study underlines the need to focus on attitudes in DV prevention programs among adolescents and emerging adults and to consider gendered differences.

S12.5. A FREE USER-FRIENDLY APP FOR ACTOR-PARTNER INTERDEPENDENCE MODELS: A DEMO

Lara Stas[1], David Kenny[2], Axel Mayer[3] & Tom Loeys[1]

[1] Ghent University, Belgium
[2] University of Connecticut, USA
[3] RWTH Aachen University, Germany

The actor−partner interdependence model (APIM; Kashy & Kenny, 2000) has become one of the most prominent models to analyze dyadic data. It integrates a conceptual view of interdependence together with the relevant statistical techniques for measuring and testing it (Cook, 2005). In essence, the APIM allows researchers to simultaneously examine the effect of one's own predictor score on one's own outcome (i.e., the actor effect), and on the outcome of his or her partner (i.e., the partner effect). Although dyadic research has become immensely popular, its statistical complexity can be a barrier. To remedy this, a free user-friendly web application, called APIM_SEM, has been developed. This app automatically performs the statistical analyses (i.e., structural equation modeling) of both simple and complex APIMs. It allows the researcher to analyze distinguishable or indistinguishable dyads, to examine dyadic patterns, to estimate actor and partner effects of one or two predictors, and to control for covariates. The program requires no prior knowledge of statistical software, nor a detailed background of the statistical techniques to use all of their features. In addition to computer output of statistical tests, it presents the results in text format complete with summary tables and figures. It is written in Shiny (Chang et al., 2015) which is a web application framework for R with an appealing point and click interface. Although R is used in the background, users do not have to install R (or any other software) nor specify any R-code. All analyses are performed automatically behind the scenes.

Abstracts

Parallel Sessions 13-18

15u00-16u20

S13 - Thematic Session

15u00-16u20

Room A

Mental health care

Chair: K. De Cuyper[1]

[1] LUCAS KU Leuven, Belgium

S13.1. Head-mounted virtual reality in older adults: positive attitudes after a first user experience

Hanne Huygelier[1], Brenda Schraepen[1], Raymond van Ee[1], Vero Vanden Abeele[2], and Céline R. Gillebert[1,3]

[1] Department of Brain and Cognition, KU Leuven, Belgium
[2] E-media lab, KU Leuven, Belgium
[3] Department of Experimental Psychology, University of Oxford, UK

Using new technologies such as virtual reality (VR) can boost the assessment and treatment of health problems. The application of these new technologies may however not be straightforward in an older and frail population. For instance, older adults may be sceptical towards new technologies and this attitude may hinder the usability of the new application. To make new technologies usable for the assessment and treatment of health problems, it is important to obtain a better understanding of the predictors of initial attitudes towards technology in older adults and to know to what extent attitudes can be changed through a first positive user experience. For this purpose, we investigated the attitudes of 38 older and frail adults (50% recruited through nursing homes and 50% community dwellers) towards head-mounted VR devices (H-VR, the Oculus Rift headset). The older adults had never experienced immersive VR before participation in the study. Attitudes were measured before and immediately after their first user experience. The results showed that the initially neutral attitudes towards H-VR became more positive after a first user experience. Furthermore, physical complaints were uncommon, and the first H-VR experience was rated in a positive way. In conclusion, H-VR can be used in an older and frail population. In addition, we will report on our results of a path analysis that was used to study whether initial attitudes could be predicted by age and whether the effect of age was mediated through the cognitive status of the individuals and their computer experience.

S13.2. First aid kit for PICS (Post-Intensive Care Syndrome)

Bo Van den Bulcke[1], Annabel Boury[1], & Anne-Sofie Goemanne[1]

[1] Department of Intensive Care, Ghent University Hospital, Belgium

Introduction: PICS describes new or worse health problems after critical illness that remain after you leave the hospital. These problems can be with your body, thoughts, feelings or mind and may affect you or your family (60-84% of ICU patients). It is a relatively new diagnostic criteria, which we have to point out in our Belgian health care system.

Objectives: To help patients and families coping with long term effects of an ICU stay.

Methods: The first aid kit for PICS consists in the first place of psycho-education regarding the syndrome, to the ICU team, patient and families, general practitioners. Moreover, during the ICU stay, we offer music, diaries and supportive talks to patients and families. Since December 2017 we started a peer group, UZ Intens, six times a year, to give patients and families an opportunity to share their experiences with ICU clinicians and other ICU survivors. We also set up an art project in the ICU with the experiences of former ICU patients and an art-photographer. Since we implemented the first aid kit (2016), we are inviting patients, after 3-6 months hospital discharge, to test on PTSS, Quality of life (EQ5D) and other questionnaires concerning physical and mental problems (article in submission).

Results: Our MUSIC study and diary study showed us positive effects on anxiety and depression scores among ICU patients and families[4]. An interviewee's quote, regarding their ICU experience: "The ICU is like taking a plane, you go in and the pilot decides whether you are going to survive or not…"(*M042)*

Conclusion: Our study results confirm the necessity to pay attention to long term effects of ICU patients and their families. Our findings help to clarify the impact on cognitive function, depression and PTSS symptoms after critical illness among ICU survivors. Psychological screening is warranted in parallel with cognitive function assessment and psycho-education in ICU survivors and families.

S13.3. Gender non-binary people's experiences in trans care

Aisa Burgwal[1] & Joz Motmans[1]

[1] Ghent University

Background. Gender non-binary (GNB) people (people who do not identify with the gender they were assigned at birth and are also outside the gender binary of male or female) remain largely invisible in health care research. Quantitative data analysing their experiences in health care settings is generally lacking.
Aim. To compare GNB respondents and other trans people in five European countries on different health-related topics, such as access to care, self-rated health, suicide, HIV, and so forth. Method. An online anonymous survey targeted at self-identified trans persons aged 16 years or older was conducted in five countries (Georgia, Poland, Serbia, Spain and Sweden). The survey included (amongst others) questions regarding: (1) demographics, (2) background regarding gender and sexual identity, including level of openness, reactions, social support, trans-specific care, (3) general and mental health, including suicidal ideation and attempts, and (4) experiences in health care settings, including discrimination. Results. The GNB group rated their overall health significantly more often as bad in comparison to trans men and trans women and showed significantly higher rates of having a chronic problem, illness or disability. Furthermore, they more often evaluated health care as bad. In contrast with trans men and trans women, only a small proportion of the GNB group ever sought psychological or medical help for their gender identity. Also, GNB respondents who wanted to access trans care services significantly more often than trans men or trans women didn't know where to go. When looking at well-being, non-binary respondents also appeared to have much more often a depressive or low mood than trans respondents. Discussion. This study highlights the need to increase awareness on the differences between non-binary trans respondents and binary trans respondents, especially within health care research and services, because it appears that not only health care is more negatively evaluated by non-binary people, also their health is significantly worse than the health of trans binary respondents.

S13.4. Prevention by General practitioners of long-term absence of people with mental health issues

Inge Neyens[1] & Chantal Van Audenhove[1]

[1] LUCAS KU Leuven, Belgium

Background. The first professional that people with mental health issues most often meet, is the general practitioner (GP). GPs are a crucial partner in the prevention of people's long-term absence from work. They can make a difference and prevent long-term absence by making a correct diagnosis and offering an effective treatment or referral.

Aim. One way to support GPs in these tasks is to implement a tool in their electronic medical file. Therefore, we developed a concept of such a tool supporting GPs in the prevention of mental illness related to work and examine consensus about the tool.

Method. We developed the tool, based on the results of a survey among 323 GPs in Flanders, a review of existing tools and by conducting five individual interviews and three expert panels with GPs, MHC users and IT-software providers from Flanders, Brussels and Wallonia. We examined consensus about the tool via a Delphi study among 43 Belgian and three multidisciplinary expert panels consisting of representatives of GPs, occupational physicians, employment services, employers and medical advisers of the insurance company.

Results. The tool enables GPs to make work discussible and to support their patient's search for a job and return to work. It offers information about the system of allowed activity, reminds GPs about the patients' right to visit an occupation physician before returning to work and provides (1) an overview of partners and their contact details and (2) information about the roles and goals of employment services (e.g. VDAB) and about the new Belgian laws on reintegration. It also offers a visual overview of incapacity for work.

Conclusion. We conclude that GPs and the multidisciplinary experts in this study largely agree on the content, timing and format of the tool.

S13.5. Perspectives of people with severe and enduring mental illness on integrated care in Flanders

Inez Buyck[1], Chantal Van Audenhove[1] & Koen Hermans[1]

[1] LUCAS KU Leuven, Belgium

Background. Integrated care refers to the management and delivery of a continuum of (health)care services that are tailored to people's needs and coordinated across different levels and sites of care. Compared to medical health care, integrated care is rather recently introduced in mental health care (MHC). The MHC reform in Flanders set up multidisciplinary mobile teams to enhance integrated care for people with severe and enduring mental illness.
Aim. This study examines people's experiences about provision of integrated care by mobile teams. Method. A mixed method approach was used. First, 130 people with severe and enduring mental illness completed a questionnaire on the perceived provision and importance of integrated care by mobile teams. Subsequently, 10 people participated in 2 focus group interviews to gain further insights. Results. The results demonstrate that in general, the participants are very satisfied with the care provision by mobile teams and especially value their contribution to prevention of hospitalization. Furthermore, they highly acknowledge the respectful, confidential and comprehensible approach of the multidisciplinary teams. Participants also appreciate the affordability of the provided care. However, some participants indicate that they do not have sufficient access to and control of their records and treatment plans. Moreover, a better collaboration between the mobile teams and external caregivers, particularly general practitioners and psychiatrists, is wanted. Finally, while some participants prefer to have more family involvement, others do not want their family to be involved in the care by mobile teams. Conclusion. This study shows that people with severe and enduring mental illness experience large benefits from integrated care offered by multidisciplinary mobile teams. Yet, to offer satisfactory person-centred care, it is crucial to acknowledge people's opinions on care delivery. Also, a continuum of care in which services of multidisciplinary teams are effectively integrated with additional care provision is needed.

S14 - Invited symposium

15u00-16u20

Room B

Should I stay or should I go? Guiding and misguiding actions by incentive valence

Organizers: Gerard Derosiere[1] & Ruth Krebs[2]
Chair: Ruth Krebs[2]

[1] Université Catholique de Louvain, Belgium
[2] Department of Experimental Psychology, Ghent University, Belgium

S14.1. Contribution of the primary motor cortex to action value encoding during motor decisions

Pierre Vassiliadis[1]

[1] Université Catholique de Louvain, Belgium

In daily life, action selection and decision-making are constantly biased by implicit value signals. When choosing a place for dinner on a Friday night, the estimated value of each restaurant will not only depend on a deliberate inspection of the menus but also on less conscious cues such as the atmosphere in the restaurant. Despite the crucial impact of implicit value cues on daily living choices, the exact contribution of the primary motor cortex to the encoding of this source of information remains obscure. In this talk, I will present the results of a recently published study (Derosiere et al., 2017, NeuroImage) in which we show that the human primary motor cortex is involved in the encoding of implicit value information during motor decisions. A thorough description of the dynamics of this encoding during reinforcement learning and decision-making will be provided.

S14.2. Interplay between motivational and emotional valence at the behavioural and neural level

Haeme Park[1]

[1] Ghent University, Belgium

It is well-known that we are greatly influenced by emotional and motivational events, which may occur independently from each other, or together. This raises interesting questions regarding the interplay between these affective processes, such as whether coincidental emotional information can modulate responses to reward-related stimuli; and what happens when there is an explicit mismatch between motivational and emotional valence. Here, two studies conducted in our lab investigating the neural bases of such emotion-motivation interactions will be discussed. In the first study, a Go/NoGo task was utilised to examine the effect of irrelevant emotional background stimuli on reward-triggered response biases, while in the second study, reward availability was explicitly signalled by valence compatible (positive) and incompatible (negative) emotional stimuli. The results suggest a complex interplay between the two constructs, in which task/context-dependent situations dictate the extent to which emotional information may influence our motivation.

S14.3. Effects of winning and losing on action control

Frederick Verbruggen[1]

1 Ghent University, Belgium

Several theoretical accounts assume that negative incentive valence signals lead to inhibition or action restraint. I will present two data sets that suggest a more nuanced view. First, I will show that reward and punishment can to a similar extent lead to action restraint. Second, I will show that losing a potential reward can lead to increased action vigor, instead of action restraint. To explain these and other related findings, I will look at the role of task context and task demands.

S14.4. Toward a better understanding of the applied scope of go/no-go training

Harm Veling[1]

[1] Radboud University Nijmegen, The Netherlands

Many people struggle with changing their value-based decisions for food items. Interestingly, simply not responding to appetitive food items during go/no-go training reduces evaluations of these food items and reduces choices for these food items among normal-weight university students. However, the applied value of these findings is not yet entirely clear. To gain more insight into this topic, we administered an identical go/no-go training among both morbidly-obese individuals and normal-weight university students, to assess whether findings from laboratory studies conducted in the university environment on food evaluation can be translated to clinical settings. Obese and normal-weight individuals showed similar effects of go/no-go training on food evaluation. A separate series of experiments among university students showed robust evidence that effects of a single training session on food choice could still be observed after one week. Together these findings provide further knowledge on the possible applied value of food go/no-go training.

S15 - Invited symposium

15u00-16u20

Room C

Sexual and gender prejudice

Organizers: Yasin Koc[1] & Colette Van Laar[2]
Chair: Colette Van Laar[2]

[1] University of Groningen, The Netherlands
[2] KU Leuven, Belgium

S15.1. The motivated cognitive basis of transphobia: The role of right-wing ideologies and gender role beliefs

Arti P Makwana[1], Kristof Dhont[1], Jonas De keersmaecker[2], Parisa Akhlaghi-Ghaffarokh[1], Marine Masure[2] & Arne Roets[2]

[1]University of Kent, UK
[2]Ghent University, Belgium

Transgender individuals challenge the traditional assumption that an individual's gender identity is permanently determined by their assigned sex at birth. Perceiving ambiguity surrounding indeterminate gender identities associated with transgender individuals may be especially disturbing for those who generally dislike ambiguity and have preference for order and predictability, that is, for people scoring higher on Need for Closure (NFC). We tested the associations between NFC and transphobia in two studies using community samples from the United Kingdom (*n* = 231) and Belgium (*n* = 175), and we examined whether right-wing ideological attitudes and traditional gender role beliefs mediated these relationships. Confirming our expectations, we found that NFC was significantly associated with transphobia through both stronger adherence to social conventions and obedience to authorities (i.e., right-wing authoritarianism) and stronger endorsements of traditional gender roles in the UK and Belgium, as well as through stronger preferences for hierarchy and social inequality (i.e., social dominance orientation) in the UK. Our results suggest that transgender individuals are more likely to be targets of prejudice by those higher in NFC at least partly due to the strong preference for preserving societal traditions and the resistance to a perceived disruption of traditional gender norms. Hence, attempts to reduce transphobia might be especially challenging among those high in NFC. Nevertheless, prejudice-reducing interventions could incorporate techniques that satisfy epistemic needs for predictability, certainty, and simple structure which may have higher chances of success among high NFC individuals.

S15.2. Global identification as a coping mechanism to reduce identity conflict among Turkish gay men

Yasin Koc[1] & Vivian L.Vignoles[2]

[1] University of Groningen, The Netherlands
[2] University of Sussex, UK

Globalisation provides people with new sets of values and contexts, which might be used to transform identities especially in cases of multiple incompatible identities. For gay men living in cultures where the locally hegemonic masculinity prescribes rejection of homosexuality, gay male identity is inherently threatened. In such cases, adopting a 'global citizen' identity may function as a coping strategy and increase the compatibility between gay and male identities, and hence wellbeing. Across three studies conducted in Turkey, we found qualitative (Study 1; N=8), correlational (Study 2; *N*=218), and experimental (Study 3; *N*=220) evidence that identifying as a global citizen was related to an integrated perception of gay and male identities, and indirectly wellbeing. Overall, our findings illustrate how different identity categories can intersect and affect each other in complex ways. We discuss wellbeing implications for gay men living in cultures with high levels of prejudice and the potential for interventions.

S15.3. Daily coping with social identity-threat in non-traditional domains: Self-group distancing among female soldiers

Jenny Veldman[1], Colette Van Laar[1], Loes Meeussen[1], & Salvatore Lo Bue[2]

[1] KU Leuven, Belgium
[2] Royal Military Academy Brussels

Over the last few decades, research has established that social identity-threat can negatively affect targets' well-being, motivation, and performance in non-traditional work and education domains. Simultaneously, we increasingly know that targets are not passive recipients and that they actively cope with feeling devalued because of their social identity. Although this has been acknowledged in the field, we are only just starting to understand how these active coping processes work. In the present research, we examined how women in a non-traditional domain cope with daily experiences of social identity-threat and accompanying concerns about belonging and achievement in the domain by distancing themselves from other women psychologically or physically. This self-group distancing has been interpreted as an adaptive coping response to protect one's work-related outcomes, but how this relates to such outcomes is currently unknown. The present work examined this among women at the Royal Military Academy in an experience sampling study, a method that enables examination of social identity threat as it is experienced and coped with on a daily basis. Sixty-one female soldiers completed six surveys during two weeks on their daily experiences. Multilevel analyses showed, as expected, that daily fluctuations in social identity threat predicted daily fluctuations in self-group distancing. This was driven by daily concerns about belonging in the military, but not by concerns about achievement. Additionally, daily self-group distancing could not in the short-term protect women's outcomes, but was generally related to lower daily well-being and motivation. The implications for theories on coping with stigma and hidden costs are discussed.

S15.4. A self-perpetuating cycle of self-group distancing: Self-group distancing in senior women induces self-group distancing in other women

Naomi Sterk[1], Loes Meeussen[1], & Colette Van Laar[1]

[1] KU Leuven, Belgium

Previous research has revealed that one way that women may attempt to avoid negative stereotypes of their group in the field of work is through self-group distancing: assimilating into masculine organizations, distancing themselves from other women and legitimizing organizational inequality. Self-group distancing is an individual-level self-regulation strategy for coping with negative stereotypes; contesting negative stereotypes on the individual level but sustaining them on the group level. Factors that increase self-group distancing among women and other negatively stereotyped groups have been identified (e.g. experience with existing discrimination and low group identification), but it is unknown how self-group distancing by a female or ethnic minority leader affects others of the negatively stereotyped group. In two studies, we examined how self-group distancing in senior women affects self-group distancing in other women. Female participants received ambiguous negative feedback from a male versus female leader displaying behavior associated with self-group distancing in women (e.g. denying gender discrimination, emphasis on importance of masculine qualities in organization) versus neutral behavior. As expected, women who were exposed to a female leader displaying self-group distancing behavior were more likely themselves to engage in self-group distancing: presenting themselves as more masculine, showing less interest in collective action and reporting an increased interest in individual career mobility. Identical behavior from a male source did not affect self-group distancing. The implications for social stigma and inequality in the workplace are discussed.

S16 - Invited symposium

15u00-16u20

Room D

Practical Solutions for improving open science and research integrity

Organizer and chair: Pieter Van Dessel[1]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

S16.1. How to use the Open Science Framework to facilitate openness and integrity of your research?

Pieter Van Dessel[1]

[1] Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

The Open Science Framework (https://osf.io) is a free, open source web application that provides a platform for researchers to document, register, archive, share, and collaborate on research projects, materials, and data. In this talk, I will provide a hands-on demonstration of what the Open Science Framework offers researchers to improve the openness and integrity of their research in all phases of the research process (planning, registering, analyzing, reporting and archiving research).

S16.2. Data sharing 101: A principled approach to transparency in psychological science

Olivier Klein[1]

[1] Université Libre de Bruxelles, Belgium

While many psychology scholars are convinced that transparency is a "good thing", there are very few standards as to how transparency should be applied in practice. What should we share? When should we share? Where should we share? Also, many reasons may discourage scholars from sharing (e.g., privacy concerns, fear of data being "stolen" or that errors may be discovered...). In this talk, I will try to address these questions succinctly and provide a suggested workflow for integrating transparency at all steps of a research project.

S16.3. Transparent reporting with R Markdown and papaja

Tom Heyman[1]

[1] KU Leuven, Belgium

Scientific reports often involve some kind of data-analysis, of which the outcome is summarized. Typically, the analysis code is not included and the various (intermediary) steps are only briefly described. However, such an approach may yield problems in terms of transparency and reproducibility. In this colloquium, I will discuss an alternative which involves integrating the analysis code into the manuscript using R Markdown and papaja. It essentially comes down to slightly changing the standard workflow, thereby creating a number of advantages including enhancing transparency, increasing shareability, and facilitating corrections.

S16.4. Increasing Transparency through a Multiverse Analysis

Wolf Vanpaemel[1]

[1] KU Leuven, Belgium

Empirical research inevitably includes constructing a dataset by processing raw data into a form ready for statistical analysis. Data processing often involves choices among several reasonable options for excluding, transforming and coding data. We suggest that instead of performing only one analysis, researchers could perform a multiverse analysis, which involves performing all analyses across the whole set of alternatively processed data sets corresponding to a large set of reasonable scenarios. Using a worked example focusing on the effect of fertility on religiosity and political attitudes, we show that a single data set can be misleading and propose a multiverse analysis as an alternative practice. A multiverse analysis offers an idea of how much the conclusions change because of arbitrary choices in data construction and gives pointers as to which choices are most consequential in the fragility of the result.

S17 - Symposium

15u00-16u20

Room E

Psychological, physiological and environmental aspects of dietary intake

Organizer: Valérie Broers[1]
Chair: Stephan Van den Broucke[1]
Discussant: Caroline Braet[2]

[1] Université Catholique de Louvain, Belgium
[1] Ghent University, Belgium

The current symposium aims to explain some of the psychological, physiological and environmental aspects of dietary intake. The speakers have different backgrounds in biology, public health, psychology, marketing and policy-making that complement each other in the search for a more integrated model that aims to promote healthy food behaviour. The presentations will show a diversity of study designs (cross-sectional/experimental studies, lab/field studies, literature review). The symposium will first discuss dietary intake from a biological perspective showing the biological correlates of stress and emotional eating and will continue with a public health intervention that aims to increase healthy food consumption. Subsequently, the effectiveness of marketing techniques in the form of sustainable and ethical food labels will be discussed and finally an overview of the influence of the food environment on consumers' choices from a behavioural policy-making perspective will be presented. We conclude with a discussion to highlight the integrated take-home message.

S17.1. Biological correlates of stress and emotional eating in youth: cortisol, appetite hormones and microbiota

Nathalie Michels[1]

[1] Department of Public Health, Ghent University, Belgium

Background: Stressed people often eat increased amounts of unhealthy food. A well-known underlying pathway is the increased cortisol which might simulate reward sensitivity and appetite hormones like leptin. In addition, recent evidence appeared that gut bacteria can “communicate” with the brain, thus also with the hypothalamus appetite-regulating center and the stress/cortisol-regulating center. Understanding the phenomenology of stress and emotional eating in youth can aid in the prevention of eating disorders and obesity.

Methods: In +-300 Belgian children, stress questionnaire data, diet (food consumption, psychological eating behavior), adiposity and leptin were measured over two years. Cross-sectionally, cortisol levels and fecal samples were collected.

Results: Children with a high stress score reported more sweet food consumption, emotional eating and external eating. High cortisol was associated with an unhealthy diet (especially with the sweet foods) and also with higher leptin levels in girls. Leptin was a moderator i.e. the combination of high leptin and high stress was related to high emotional eating. Also gut microbial differences were seen depending on the stress level e.g. more short-chain fatty acid producers.

Conclusions: The results support the theory of cortisol–induced comfort food preference and a role of leptin and gut bacteria. We will further elucidate the underlying biological pathways via epigenetics, appetite hormones and metabolomics in this cohort, in an emotion regulation intervention and in three other large international datasets. Gut bacteria are able to change gene methylation/expression and both can influence appetite messengers (PYY, GLP1, ghrelin,..). These results might inspire towards probiotics and new biomarkers in the stress-appetite field.

S17.2. Investigating the conditions for the effectiveness of nudging for prebiotic vegetables

Valérie Broers[1], Stephan Van den Broucke[1], Cédric Taverne[2] & Olivier Luminet [1,3]

[1]Psychological Sciences Research Institute, Université Catholique de Louvain, Belgium
[2] Institute of Statistics, Biostatistics and Actuarial Sciences, Université Catholique de Louvain, Belgium
[3] Fonds de la Recherche Scientifique (FNRS)

Inulin-type fructans (ITF), which are found in vegetables rich in "prebiotic" nutrients such as leek, salsify, artichoke and Jerusalem artichoke, are known for their prebiotic capacities and may contribute to preventing obesity. The current study aimed to assess the differential effects of type-1 and type-2 nudges to increase the choice for "prebiotic" vegetables at a hot vegetable buffet, using a nonrandomized intervention study design involving two interventions in a university restaurant setting for five consecutive weeks. An intervention was implemented in which customers were exposed to type-2 nudging in the form of short "cue-to-action" messages placed on their trays and above the hot vegetable buffet, and to an additional type-1 nudging intervention in the form of placing dishes with "prebiotic" vegetables in a more accessible place. On average, a total of 503 customers per day purchased food at the restaurant and 28 servings of hot vegetables were sold. The beta regression model showed that the "cue-to-action" intervention increased the proportion of customers who used the hot vegetable buffet, $p < .001$, OR: 1.24. The beta regression model showed, however, that the proportion of "prebiotic" vegetables chosen decreased during all nudging intervention weeks, $p < .01$, OR: 0.73. The cue-to-action intervention increased familiar vegetable choice in general and decreased unfamiliar, prebiotic vegetable choice. The additional intervention that increased accessibility to prebiotic vegetables did not change prebiotic vegetable choice. The effectiveness of nudging seems to depend on the specificity and/or the familiarity of the nudged products. A study is being conducted at the

moment to see whether increasing familiarity by tasting the prebiotic vegetable (which can also be considered a nudging technique) as well as changing its name to “suggestion of the chef” will increase prebiotic food choice or overall food choice of the same category.

S17.3. Perceived healthiness of organic and Fairtrade apple juice and chocolate: does moral satisfaction make food with sustainable and ethical food labels subjectively healthier?

Maria Mulders[1], Victor Lindberg[1], Boyka Bratanova[2], Olivier Corneille[3], & Olivier Klein[1]

[1]Research Center for Social and Intercultural Psychology, Université Libre de Bruxelles, Brussels, Belgium

[2]Dundee Business School, Abertay University, Bell Street, Dundee, Scotland, UK

[3]SOCORLAB, Université Catholique de Louvain-la-Neuve, Louvain-la-Neuve, Belgium

The higher healthiness of organic and fair-trade products does not reach consensus in the scientific community, yet past research seems to indicate that consumers tend to perceive it that way. We conducted two online surveys to test the hypothesis that organic and Fairtrade products are perceived as healthier than their conventional counterparts and that this effect can be explained by a higher experienced moral satisfaction. The experimental design of the study was: Label (control, organic, fair trade) x Product (apple juice, chocolate) with Label as a between-subject variable and Product as a within-subject variable. In the first study (n= 250) we varied the products presented between apple juice and chocolate. We found that, in general, labelled products were perceived as healthier, tastier and having a higher acceptable price than the same unlabelled products (e.g. for healthiness of the product: $F(2, 247)= 20.13$, $p< .001$; *organic*: $\mu(78)= 48.23$, *fair trade*: $\mu(87) = 48.19$ and *control*: $\mu(85) = 34.28$). In addition, we explored the influence of nutritional and food involvement as two constructs of motivation, which seem to partly moderate the results. Inspired by Bratanova et al. (2015) our second study (n = 252) was carried out to test the mediator role of moral satisfaction between labelling and perception of healthiness (both absolute healthiness and compared to similar products). In line with previous research, we found that moral satisfaction seems to fully explain the main effect for both absolute and compared healthiness.

S17.4. How does the food environment influence consumer's choice? An overview

Jonathan Peuch[1]

[1] Centre de Philosophie du Droit, Université Catholique de Louvain, Belgium

Obesity is a global problem that is rising since 1980's linked to the development of sedentary lifestyle and of a food diet (Cutler, Glaeser & Shapiro, 2003; Hercberg, Basdevant & Julia, 2013; WHO, 2004) driven by a corporate "food regime" (McMichael, 2016; De Schutter, 2017). Since end 1990's, the approaches aiming at reducing obesity have added to an individual level focusing on calories intake and expenditure, an environment level taking into account many factors that influence consumers in situation of choosing their food (Swinburn, Egger & Raza, 1999; Nelson & Woods, 2009). The goal became to enable people to adopt a healthy food and lifestyle. However, the food environment itself is shaped by a macro landscape (Dommarco, 2014) that is far beyond the consumer's views and capacities.

In this context, the aim of this presentation is to present an overview of the influence of the food environment on consumers' choices, drawing mainly from insights of behavioural policy-making. It concludes that the default food option is bad for health, and that only few consumers are able to make autonomous choices.

S18 - Thematic Session

15u00-16u20

Room F

Attention & Perception

Chair: Mandy Rossignol[1]

[1] Cognitive psychology and Neuropsychology Lab (PCN), University of Mons, Belgium

S18.1. The statistics of line configurations and their influence on letter perception

Joanna Isselé[1] & Fabienne Chetail[1]

[1] Laboratoire Cognition Langage et Développement (LCLD), Research Center in Cognition & Neuroscience (CRCN), Université Libre de Bruxelles, Belgium

According to Changizi, Zhang, Ye, and Shimojo (2006), the characters of our writing systems have been culturally selected to accommodate our visual system. Their ecological hypothesis is based on the observation that the distribution of line configurations in the characters of our writing systems mimics their distribution in natural scenes. To test one of the predictions of this proposal, we examined whether our visual system is sensitive to the natural scene frequencies of line configurations. In order to do so, we created an artificial alphabet which consisted of a group of pseudoletters with high-frequency line configurations and a second group with low-frequency configurations. In a pseudoletter detection task, participants detected whether a pseudoletter probe was present in a target string of five pseudoletters. We hypothesized that pseudoletters with a high natural scene frequency would be easier to detect than pseudoletters with a low natural scene frequency. In addition, we tested whether visual experience with a stimulus set can diminish visual constraints on letter detection. Pseudoletter detection performances were compared before and after training with the artificial alphabet. The training phase consisted of an exposure task and a writing task. For reaction time data, the results were in line with the hypothesis. Before training, reaction times were faster for high-frequency pseudoletters than for low-frequency pseudoletters, and this advantage disappeared after training. For error rates, none of the results reached significance. The possible implications for models of visual word recognition are discussed.

S18.2. Investigating emotional face processing in children with autism using fast periodic visual stimulation EEG

Hella Thielen[1], Stephanie Van der Donck[1,3], Sofie Vettori[1,3], Milena Dzhelyova[2], Jean Steyaert[1,3], Bruno Rossion[2], & Bart Boets[1,3]

[1] Center for Developmental Psychiatry, KU Leuven, Belgium
[2] Psychological Sciences Research Institute and Institute of Neuroscience, Université Catholique de Louvain, Belgium
[3] Leuven Autism Research Consortium (LAuRes), KU Leuven, Belgium

Previous neuroimaging and behavioral studies on the processing of facial expressions in individuals with autism spectrum disorder (ASD) resulted in inconsistent conclusions. Therefore, fast periodic visual stimulation electroencephalography (FPVS EEG) is introduced as a new technique to pinpoint the individual sensitivity for subtle facial expressions. This double-objective approach has several advantages, including the ability to study implicit face processing, a high signal-to-noise ratio, quick data-acquisition and straightforward analysis. A first FPVS EEG oddball paradigm investigated fear discrimination along a single facial identity, and additionally investigated the inversion effect (upright vs. inverted faces) and the effect of attentional focus (nasion vs. mouth). A second oddball paradigm investigated the sensitivity for a series of expressions (happiness, fear, anger, sadness), presented among different facial identities. The EEG responses of 23 8-to-12 years-old boys with a formal ASD diagnosis were compared to those of a matched typically developing (TD) control group. Robust responses were visible at the base and oddball frequency (and their harmonics), suggesting that FPVS can index sensitivity to socio-communicative cues in 8-to-12 year old children. Comparison to adult data suggests an ongoing development of the social brain in school-aged children. Children with ASD and TD controls were able to detect changes in facial expression across different identities and showed the typical inversion effect, indicating their ability for high-level, holistic emotional face processing. However, children with ASD showed significantly lower oddball responses to brief changes in fearful and angry expressions, indicating reduced sensitivity to the most subtle socio-communicative cues.

S18.3. Reliability of the individual face discrimination response with fast visual periodic stimulation

Milena Dzhelyova[1,2], Corentin Jacques[1], Guilia Dormal, Bruno Rossion[1,3] & Christine Schiltz[2]

[1] KU Leuven, Belgium
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Recently the claim that humans are experts in face perception has been challenged with findings showing that humans vary substantially at unfamiliar face recognition. Some people outperform the rest (super recognizers) while others (prosopdysgnosia, Rossion, in press, Cognitive Neuropsychology) struggle and score lower than the average performance. Different tests have been developed to assess the individual differences in face perception skills. Recently an alternative approach, fast periodic visual stimulation (FPVS) coupled with electroencephalogram (EEG), has been proposed to measure automatic and rapid individual face discrimination with high sensitivity (i.e., signal to noise ratio) in every individual (Liu-Shuang et al., 2014, Neuropsychologia). Yet, the reliability of the approach has not been addressed. To this end, we tested 30 participants with face discrimination paradigm in two sessions approximately 2 months apart. Results show high reliability across the test-retest sessions. The identity discrimination response does not change across sessions and is characterized with consistent topography over the occipito-tempotal sites. The test-retest responses showed high correlation and were almost identical to split-half reliability, suggesting that the variance in the data could be explained by general factors such as scalp thickness, dipole orientation etc,. In addition, the identity discrimination response was moderately but significantly correlated with behavioral measures of face recognition skills estimated with an electronic version of the Benton face recognition test. Taken together these observations highlight the potential of the method to be applied to study individual differences in face recognition skills but also in other domains.

S18.4. Can poor empathic skills be explained by cognitive flexibility deficits in depression?

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Cognitive theories posit that depression could be characterized by cognitive flexibility deficits. Furthermore, studies showed poorer empathic skills in depression. As functional empathy requires to switch from self to others' perspective, the purpose of this study is to investigate the role of mental flexibility in empathic deficits.

To this aim, we recruited a sample of 30 women, aged 18 to 23. To assess behavioral affective empathy (AE) and cognitive empathy (CE), participants performed the Multifaceted Empathy Test (MET), which consists of photographs depicting people in emotionally charged situations. Subjects had to rate pictures' arousal, protagonists' emotional states and their level of distress toward these. Afterwards, they completed a local-global (LG) task measuring cognitive flexibility. In the emotional condition, happy and sad faces where displayed behind local and global forms, whereas no faces appeared in non-emotional condition.

Results showed that subjective empathy (Basic Empathy Scale) was negatively correlated with depression (Beck Depression Inventory-II) and flexibility in sad context. MET scores revealed better recognition for negative emotions (specially sadness) in higher levels of depression. LG scores highlighted flexibility deficits in participants with higher levels of depression in the non-emotional condition and when they were processing happy faces. Furthermore, they performed better when processing sad faces in the local condition, while worse scores were obtained in the global one. Flexibility in positive context tends to be impaired when participants rate more intensely others' negative emotions and feel more distress toward them. This partial role of mental flexibility in empathic skills will be discussed.

S18.5. Electrophysiological correlates of attentional engagement and disengagement from threat in anxious children

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Pediatric anxiety disorders are characterised by attentional biases (AB) towards threat. Electrophysiological studies in adults revealed enhanced P100 and P200 amplitudes for threatening faces reflecting enhanced detection, perceptual processing and disengagement impairments. Studies investigating these questions in children are scarce while they may allow to model anxiety's effects on attentional processes under development. This study aimed to investigate electrophysiological correlates of attentional engagement and disengagement abilities from threatening faces in anxious children. Fifteen children reporting high levels of social anxiety and twenty healthy controls completed the State-Trait Anxiety Inventory for Children (STAI-C) and the Social Phobia and Anxiety Inventory for Children (SPAI-C) to examine the separated effects of these variables. They performed an emotional spatial-cueing task in which they had to detect targets cued by neutral or disgusted faces. Electrophysiological activity was recorded throughout the task. Results showed that children with high levels of trait anxiety had larger P100 amplitudes for disgust while high levels of social anxiety were correlated to larger P200 amplitudes. Children with high trait anxiety had larger P100 amplitudes for targets following disgusted faces. However, social anxiety did not influence targets processing. These results confirm the presence of AB towards threat in anxious children but the type of anxiety seems to moderate this effect. Trait anxiety is associated with enhanced attentional engagement whereas social anxiety seems to be characterised by disengagement impairments. Interestingly, these processing were associated to a faster processing of disgust for all children confirming a distinction between the notions of effectiveness and efficiency in anxiety disorders.

Abstracts

Poster
Session 1

12.00-12.50

Social and interpersonal processes

12u00-12u50

P1 - 'FAKE NEWS': INCORRECT, BUT HARD TO CORRECT. THE ROLE OF COGNITIVE ABILITY ON THE IMPACT OF FALSE INFORMATION ON SOCIAL IMPRESSION

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The present experiment (*N* = 390) examined how people adjust their judgment after they learn that crucial information on which their initial evaluation was based is incorrect. In line with our expectations, the results showed that people generally do adjust their attitudes, but the degree to which they correct their assessment depends on their cognitive ability. In particular, individuals with lower levels of cognitive ability adjusted their attitudes to a lesser extent than individuals with higher levels of cognitive ability. Moreover, for those with lower levels of cognitive ability, even after the explicit disconfirmation of the false information, adjusted attitudes remained biased and significantly different from the attitudes of the control group who was never exposed to the incorrect information. In contrast, the adjusted attitudes of those with higher levels of cognitive ability were similar to those of the control group. Controlling for need for closure and right-wing authoritarianism did not influence the relationship between cognitive ability and attitude adjustment. The present results indicate that, even in optimal circumstances, the initial influence of incorrect information cannot simply be undone by pointing out that this information was incorrect, especially in people with relatively lower cognitive ability.

P3 - INTIMATE PARTNER VIOLENCE: A LONGITUDINAL STUDY ON THE EFFECT OF INTERVENTION PROGRAM ON MALE PERPETRATORS' PSYCHOLOGICAL CHARACTERISTICS

Di Piazza Laetitia[1], Léveillée Suzanne[2], Kowal Cécile[3], Hodiaumont Fabienne[3], Ayotte Robert[4] and Blavier Adélaïde[1]

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The aim of our research was to examine the association between impulsivity, alexithymia and depression and the perpetration of physical and psychological intimate partner violence. We focused on these particular psychological characteristics in order to understand this phenomenon and its prevention and/or treatment. Our initial study of fifty-six male perpetrators showed domestic violence was associated with a high level of alexithymia and depression. To determine if reductions were noted about these psychological characteristics at the end of intervention program, the present study examined longitudinal data.

Method: Twenty-four male offenders (voluntary or judicialized) answered to questionnaires and structured clinical interview to assess emotional distress, impulsive behavior and alexithymia, before and at the end of their therapeutic program.

Results: Findings showed both alexithymia and depression were reduced after therapeutic management. Analyses showed male intimate partner violence offenders reported less difficulty to express their emotions and less depressive feelings at the end of their intervention program, this effect was especially significant for volunteer men. However, we observed a surprising increase of impulsivity for all participants after the therapeutic program.

Conclusion: Our findings suggested a strong link between alexithymia and domestic violence and showed the positive effect of specific therapeutic

interventions on alexithymia and depression. Some hypotheses may explain the surprising increase of impulsivity after the therapeutic program. Among others, we pointed out the fact that impulsivity was self-reported and that with the decrease of alexithymia, participants may have a better awareness of themselves and of their behavior and thus considered themselves more impulsive.

P5 - When you smile, I smile: links between alexithymia, facial emotion recognition and facial mimicry

Gois Cassandra[1] & Fantini-Hauwel Carole[1]

[1] Université Libre de Bruxelles

Alexithymia is a multidimensional concept characterized by difficulties identifying and verbalizing emotions and by externally-oriented thinking (Taylor, Bagby & Parker, 1997). People with higher degree of alexithymia (HDA) face more interpersonal difficulties and discriminate less other people's emotions. More precisely, facial emotion recognition (FER) skills are important in the context of interpersonal interactions. It takes part in a better understanding of others' mental states and thus allows improved communication and affiliation. Moreover, according to many authors, when confronted with facial expressions, we tend to imitate them automatically and irrepressibly. It is believed that this mimicry process would activate identical neural circuits as those of our interlocutor (Damasio, 1989). Indeed, it appears that HDA people suffer from a deficit of FER coupled with brain activity disturbances in common areas related to mimicry. Therefore, it is postulated that HDA people will have diminished mimicry abilities and that this could be a partial explanation to their weaker FER abilities. To test our hypothesis, a facial emotion recognition task was used, during which 89 participants were asked to evaluate 48 stimuli presenting several facial expressions varying in their intensity. In addition, all participants were filmed in order to analyze subsequently their facial reactions with FaceReader. At the present time, results are still in progress.

P7 - The Psychological Pillars of Sexism and Speciesism: The Role of Dominance Strivings, Dehumanization, and Beliefs in Female Connectedness to Nature

Alina Salmen[1] & Kristof Dhont[1]

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Scholars have long argued that exploitative attitudes towards women and animals are interconnected and rooted in shared belief systems. Yet a systematic research line empirically investigating whether and why sexism may be positively related to speciesism is currently lacking. Across five samples (total *N* = 1,936), we consistently found that both benevolent and hostile sexism were positively related to speciesism and demonstrated that beliefs in human supremacy over nature and animals play a key role in explaining these associations (Studies 1-3), even after accounting for social dominance orientation (Studies 2-3). Furthermore, perceived female connectedness to nature was uniquely associated with benevolent sexism whereas the animalistic dehumanization of women was uniquely associated with hostile sexism. Study 3 further demonstrated the implications of these findings for participants' views about sexual violence against women and restricting women's autonomy. Implications for the study of human intergroup and animal relations are discussed.

P9 - Procedural Fairness Increases Social Trust and Well-Being among Ethnic Minority Members through the Promotion of Sense of Collective Belonging

Barbara Valcke[1], Alain Van Hiel[1], Emma Onraet[1], & Kim Dierckx[1]

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Objectives. Although procedural fairness has been studied frequently during the past decades, little work has focused explicitly on how procedural fairness affects members of ethnic minorities in the context of multicultural decision-making processes. The aim of the present study was to investigate among minority members a model in which the perceptions of procedural fairness climate of societal actors is positively associated with a sense of collective belongingness, which in turn generates more social trust and social well-being.
Methods. Three samples of African-American and Hispanic respondents from the US were collected (total *N* = 639, 53.7% males, mean age = 32.66, *SD* = 9.12). Two experimental studies and one questionnaire study were conducted.
Results. Evidence was provided for the causal effect of procedural fairness climate on sense of belongingness among minority members. Analyses further showed that an enhanced sense of collective belongingness leads to an increase in social trust and social acceptance. A self-report study including all study's variables affirmed the model. In these analyses, sense of relational belongingness was used as a control.
Conclusion. This research provides further evidence for the importance of procedural fairness for ethnic minorities. Previous work has already revealed that identification with the superordinate group may be considered a necessary condition for procedural fairness to yield positive effects in members of ethnic minorities. Our research showed that, at the same time, procedural fairness may strengthen identification and belongingness.

P11 - MEMBERSHIP AND TYPICALITY IN TRIVALENT CATEGORIZATION

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Most categories are vague. They admit of borderline items that are neither determinately category members nor determinately not category members. We modelled the processes involved in trivalent categorization tasks where participants can answer with "partial member" in addition to "nonmember" and "full member". The categorization data from 363 undergraduate students for eight nominal categories were analyzed with IRTree models. We compared a one-dimensional model that assumes the choice for a particular response results from a single consideration (the extent of category membership) with a multidimensional one that assumes a response results from two considerations (one about category membership and one about typicality). We found that the multidimensional model accounted better for the categorization data than the one-dimensional model did, suggesting that membership and typicality are two qualitatively distinct processes involved in categorization. The trivalent categorization process is a sequential one whereby participants decide whether the item belongs to the category ("nonmember" vs. "partial member or full member") before establishing how representative the item is for the category ("partial member" vs. "full member").

P13 - Double punishment face to the qualification

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When it comes to reintegration after incarceration, the former prisoner is often confronted with the necessity to find a job. In this perspective, he is quickly put in competition with other applicants who do not present the same professional experiences, nor the same stigmas. In a world where employment is valued and where obtaining a stable and well-paid job depends on qualification level, it is obvious that the level of qualification is an asset for the ex-prisoners in his quest for professional reintegration. Western (2002) showed that ex-inmates encounter more difficulties to obtain a job that lead to successful reintegration. To increase our knowledge, the presented study put forward the judgment made about an applicant to the sight of his candidacy (CV and cover letter). To this matter, an online survey was used. 105 people were asked to judge, by means of a semantic differential, a candidate who had or had not been in prison and who had a master's degree or a secondary school degree allowing him to reach the coveted position. Results show that those with a lower level of qualification are judged more negatively than individuals with higher qualifications. In addition, negative judgment is even more important if the individual in question has gone to prison.

In view of these results, it seems that there is a form of negative judgment in the world of work about ex-prisoners. However, it is possible to reduce the impact of incarceration by increasing the qualification of the candidate in question.

P15 - OF MICE, MEN, AND TROLLEYS: HYPOTHETICAL JUDGMENT VERSUS REAL-LIFE BEHAVIOR IN TROLLEY-STYLE MORAL DILEMMAS

Dries H. Bostyn[1], Sybren Sevenhant[1], & Arne Roets[1]

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Scholars have been using hypothetical dilemmas to investigate moral decision making for decades. However, whether people's responses to these dilemmas truly reflect the decisions they would make in real-life is unclear. In the current study participants had to make the real-life decision to administer an (bogus) electroshock to a single mouse or allow five other mice to receive the shock. Our results indicate that responses to hypothetical dilemmas are not predictive of real-life dilemma behavior, but they are predictive of affective and cognitive aspects of the real-life decision. Furthermore, subjects were twice as likely to refrain from shocking the single mouse when confronted with a hypothetical versus the real version of the dilemma. We argue that hypothetical dilemma research, while valuable to understand moral cognition, has little predictive value for actual behavior, and that future studies should investigate actual moral behavior along with the hypothetical scenarios dominating the field.

P17 - LEXICAL TIME SERIES ANALYSIS OF NOMINALIZATION IN HUMAN INTEREST STORIES

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The role of the media in the transmission of stereotypes has been highlighted repeatedly (e.g., Duckitt, 1992). We know, for instance, that media professionals tend to nominalize, i.e., they mention the social, ethnic or cultural origin of (suspected) criminals, especially when this information is consistent with social stereotypes (e.g., van Dijk, 2012). We now however much less about the functions fulfilled by this media practice (but see Hanretty et Hermanin, 2010). To fill this gap, we analysed human interest stories published by two Belgian dailies over a period of forty-four years (1971-2015). A total of 219 articles were examined with Iramuteq (Ratinaud, 2009), a lexical analysis software. Based on Intergroup Threat Theory (Stephan et Stephan, 2000), we expected nominalization to vary depending on rate of unemployment and GDP at national and regional levels, rate of immigration, migration balance, and electoral success of far right political parties. Preliminary analysis revealed 5 classes of utterances referring, respectively, to narratives of 1) indictment of (suspected) criminals, 2) thefts, 3) arrest of (suspected) criminals, 4) violent crimes, and 5) family crimes. Od special interest, ethnic nominalizations were more frequently used in the two first classes. Results also show diversity in nominalization, i.e., nominalization can be direct or indirect, explicit or implicit, and its manifestations change over time. These preliminary results suggest that a proper understanding of nominalization in media practice demands to move beyond a purely psychological analysis to incorporate cultural and economic factors.

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P19 - DEPRESSION: STICKING TO THE NEGATIVE OR AVOIDING THE POSITIVE?

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The aim of the current study is to investigate a possible underlying mechanism driving depressive symptoms. Depression can be characterized by heightened levels of negative affect and/or reduced levels of positive affect. It is hypothesized that negative self-referent thinking (i.e., processing information about one's self in a rather negative way) and a lack of positive self-referent thinking are two important vulnerability factors in the development and maintenance of depression. We aim to disentangle those two biases (i.e., presence of negativity bias and lack of positivity bias) by means of a probabilistic reversal learning paradigm, namely the Emotional Reversal Learning Task (ERLT). In this behavioural experiment, participants (all community dwellers) are initially reinforced to engage in negative (against positive or neutral) self-referential thinking by economic reward. However, the contingency is reversed at the halfway point of the task. This reversal prompts participants to engage in positive or neutral thinking, which is a new "correct" response that is more likely to be rewarded. Our hypothesis is that depressive symptoms (measured through a self-report questionnaire) are associated with performance on the ERLT. More specifically, we expect that people with higher levels of depressive symptoms will exhibit a significant delay in switching from negative to positive/neutral responses according to the change(s) in contingency. Fear of positivity (driven by feared consequences of positivity, e.g., bad luck or losing control) may serve as a mediator. The results of this study (data collection is finished by the end of March) will be presented at the BAPS conference.

P21 - When choosing means losing: regret as a catalyst in aggravating the ruminative cycle

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Past research suggests a relation between rumination (i.e., a form of repetitive negative thinking and a well-established vulnerability factor for depression and other prevalent psychopathology) and regret (i.e., negative emotions containing self-blame, connected to cognitions about how past personal actions might have achieved better outcomes). However, these findings have not yet been investigated in experimental designs, and both trait and state components of repetitive negative thinking in relation to regret have never been taken into account. Therefore, in the present study we examined the temporal dynamics of repetitive negative thinking (state) in relation to regret, and how these are affected by interindividual tendencies to ruminate (trait brooding). Sixty-nine healthy female subjects performed a sequential risk-taking task that included feedback about alternative personal choice outcomes, and in which they experienced self-relevant goal nonattainment. The presence of repetitive negative thinking (state) prior to the task, and brooding (trait) were both independently positively associated with reported regret after goal nonattainment, suggesting that both state and trait components of repetitive negative thinking render individuals more prone to experience regret. Moreover, regret after goal nonattainment was associated with an increase in repetitive negative thinking, exclusively among individuals with high brooding tendencies. These results may suggest that, among brooding individuals, regret can act as a catalyst in aggravating a ruminative cycle, which in turn may contribute further to the development of psychopathology.

P23 - Temporal associations between social anxiety and depressive symptoms and the role of interpersonal stress

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[1] KU Leuven, Belgium

Adolescence is characterized by an increase in vulnerability for the onset of internalizing psychopathology like depression and anxiety. Even subclinical symptoms can cause impairment in several life domains and a decrease in academic and social functioning. Furthermore, positive associations between anxiety and depression have consistently been found in research. However, the specific direction of this association is less clear. This study investigated the temporal relations between social anxiety and depressive symptoms. And we also examined the role of dependent interpersonal stress as a potential mediating factor in these temporal relations. Towards this end, we made use of cross-lagged models. The results showed bidirectional temporal positive associations between social anxiety and depressive symptoms. However, the path from social anxiety symptoms to depressive symptoms was stronger than the opposite path. This means that clinicians should be specifically vigilant for the development of depressive symptoms in socially anxious adolescents. Somewhat unexpectedly, dependent interpersonal stress was not a mediator in the link between social anxiety and depression. However, paths between dependent interpersonal stress and depressive symptoms were significant in both directions which means that dependent interpersonal stress could play a role as a mediator between depressive symptoms and subsequent depressive symptoms. In contrast, there were no significant paths between social anxiety and dependent interpersonal stress. Thus, targeting dependent interpersonal stress seems most important in context of depressive symptoms.

P25 - Between vulnerability and resilience: A network analysis of fluctuations in cognitive risk and protective factors following remission from depression

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Background. Maintaining stable remission forms an important challenge for remitted depressed (RMD) patients. Research exploring how key cognitive risk- and protective factors relate suggests a central role for resilience. However, this is typically based on cross-sectional data which do not allow to map the temporal dynamics of such relations. Furthermore, it remains unclear what constitutes resilience in the context of preventing recurrence of depressive symptomatology. Methods. Using a seven-day experience sampling phase in 85 RMD patients, we examined the interplay between five cognitive vulnerability- and protective factors in daily life (osf.io/g2k4w). We present a temporal, contemporaneous, and between-subjects network, providing an in-depth analysis of how key cognitive risk- and protective factors relate to daily life fluctuations in depressive symptomatology following remission from depression. In addition, we test the role of positive affect as a main resilience factor. Results. The temporal network suggests a central role for resilience, uniquely predicting all other risk- and protective factors over time. The contemporaneous network showed that, within a given assessment period, higher levels of resilience were related to less momentary use of rumination, more use of positive appraisal, and lower occurrence of depressive symptoms. On average, participants scoring high on resilience mostly engaged in positive appraisal (between-subjects network). Similar network structures were obtained when substituting self-reported resilience by positive affect. Conclusion. These findings highlight the importance of resilience, and in particular, positive affectivity, to cope with stressors following remission from depression. This may be fostered by facilitating the use of positive appraisal.

P27 - SPIDER FEAR AND AVOIDANCE: AN EXPLORATORY STUDY OF THE IMPACT OF TWO VERBAL REHEARSAL TASKS ON A BEHAVIOR-BEHAVIOR RELATION AND ITS IMPLICATIONS FOR AN EXPERIMENTAL ANALYSIS OF DEFUSION

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The current research sought to replicate and extend the findings reported by Leech, Barnes-Holmes and Madden (2016) by examining the impact of a brief "verbal rehearsal" task on performance on two Implicit Relational Assessment Procedures (IRAPs), actual approach behavior towards a live spider (a BAT), and the relationship between the IRAPs and the BAT. The research is comprised of two verbal-rehearsal conditions, one of which focused on fear-acceptance (accept-fear) and the other on fear-reduction (reduce-fear) as ways of coping with fear. In addition to this, two IRAPs were employed, one targeting fear (Fear-IRAP) and the other targeting avoidance (Avoidance-IRAP). The FSQ and a BAT using a live house spider were also employed. Broadly similar findings were obtained for performance on the IRAPs as reported by Leech et al. No significant differences between the two verbal-rehearsal conditions emerged on the measures. However, correlations between performances on the IRAPs and the BAT were concentrated almost exclusively in the reduce-fear rather than the accept-fear condition. When considered in the context of the results previously reported by Leech et al., the differential pattern of correlations observed in the current study suggest that the verbal rehearsal task impacted upon a behavior-behavior relation that may be directly relevant to the concept of defusion in the ACT literature.

P29 - THE EFFECT OF PSYCHOEDUCATION ON RETURN OF FEAR

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Exposure therapy, or the repeated confrontation with fear-eliciting situations, is the treatment of choice for anxiety. Recent theoretical approaches such as Inhibitory Learning Theory assume that maximal learning takes place when there is a discrepancy between what is expected and what actually occurs (i.e., expectancy violation). This theory assumes that beginning exposure therapy with psychoeducation about the (small) chances that the aversive outcome will occur (e.g., that a plane will crash) will result in lower expectancy violation and consequently in less robust fear reduction. In this study, we therefore investigated the effect of a psychoeducational instruction on return of fear in an experimental paradigm.

Using a differential fear conditioning paradigm, one of two geometric figures was paired with an electric shock in the fear acquisition phase. In the subsequent extinction phase, the figures were presented in a different context (i.e., background colour) without the electric shock. Before the extinction phase, one group was informed that from then on, the chance that a shock would follow the figure would be very small, while the other group did not receive this information. Finally, we tested for contextual fear renewal by presenting the stimuli in the original acquisition context.

Data collection is ongoing, and the results will be presented at the BAPS meeting.

P31 - CUE EXPOSURE IN A VIRTUAL ENVIRONMENT INCREASE ALCOHOL CRAVING IN NON-DEPENDENT USERS

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The development of new technologies and more specifically the opportunity to immerse participants in virtual controlled environments brings new ecological framework for researchers to study complex behaviours. Our objective is to determine whether the immersion in alcohol-related virtual environment could increase craving. It was hypothesized that subjective craving levels would be higher in heavy drinkers than light drinkers (Field & Cox, 2008). Based on the score of the Alcohol Use Disorders Identification Test (AUDIT, Saunders et al., 1993), 22 light drinkers and 18 heavy drinkers were recruited and immersed in a virtual bar including alcoholic beverages. In order not to reveal the real purpose of our study, participants were informed that they were going to evaluate the aesthetic qualities and realism of the virtual environment after immersion. Once the immersion is over, participants completed four Visual Analogue Craving Scales and the ITC-SOPI questionnaire (Lessiter, Freeman, Keogh, & Davidoff, 2001) evaluating four aspects of the immersion: the sense of being there, the psychological engagement, its realism and the adverse physiological reactions due to immersion. T-test revealed that heavy drinkers have higher craving scores than light drinkers. Furthermore, stepwise regression reveals that craving was positively explained by the self-reported realism of the environment and the AUDIT score. So, immersion in a hyper stimulant environment may increase the craving of non-dependent consumers while the ecological validity of the task seems to be critical to explain self-report craving. Future studies are needed to explain craving. In particular, the role of attentional biases.

P33 - Computer Training of Attention and Inhibition for Youngsters with Obesity: a Pilot-study

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Obesity is a widespread problem that starts from an early age. Previous studies suggest that obese youngsters have an attentional bias and an automatic approach tendency towards high-calorie food and display difficulties inhibiting impulses, which may result in a higher intake of (high-calorie) food. An interesting idea for improvement of the current obesity treatment is adding a program that enables to train their difficulties. Subjects were 36 youngsters aged 9 to 15 years old from an inpatient treatment program for obesity, randomized over a training group and an active control group. The training consisted of six training sessions with cognitive tasks aimed at enhancing inhibition towards unhealthy food items (with a go/no-go task), as well as decreasing a food approach bias (using an approach/avoidance task) and a food attentional bias (using a dot-probe task). The current study evaluated the feasibility, acceptability and initial effectiveness of the training and explores if these characteristics helps obese youngsters to maintain weight-loss once they return home at the end of their inpatient treatment program. Results on the cognitive performances were investigated during two measurement sessions, spread over 5 weeks while weight evolution was followed over 13 weeks. Results showed that the training program was feasible and acceptable to the majority of participants and clinicians. Furthermore, the preliminary findings suggest that the training tasks used were ineffective in this group of obese children. Lessons learned and suggestions for future research are discussed.

P35 - MEANING PROFILES OF CLIENTS AT THE START OF PSYCHOTHERAPY

Nadezhda Golovchanova[1], Jessie Dezutter[1], & Siebrecht Vanhooren[1]

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Introduction. Psychotherapy has a strong potential of creating new meanings and questioning the existing ones (Angus & Greenberg, 2011). Previous studies demonstrated that psychotherapy clients experience significantly less presence of meaning compared to university students (Hill, Kline, Kivlighan, Aaron & King, 2017) or to general population (Volkert, Schulz, Brütt & Andreas, 2014). Since experiencing meaning in life is generally positively correlated with well-being and negatively correlated with psychopathology (Steger, 2012), meaning appears to be a clinically relevant construct.

Method. The sample of clients starting psychotherapy (N=114) was analysed regarding their experience and search for meaning, severity of symptomatology and perception of therapeutic alliance. Questionnaires assessing these constructs were administered after the second session by means of QIT online system. Presence of meaning and search for meaning were studied together as meaning profiles (person-oriented approach). The aim of the study was to investigate the meaning profiles of clients at the start of therapy and the relation of these profiles with the perceived quality of therapeutic alliance and initial symptomatology.

Results and discussion. Cluster analysis revealed that four meaning profiles are present at the start of therapy: Low Presence High Search, High Presence Low Search, High Presence High Search, and Low Presence Low Search. These meaning profiles are statistically distinguished in terms of symptomatology, but not in terms of therapeutic alliance characteristics. Further research is needed to investigate the mechanisms explaining the links between meaning profiles and symptomatology and to explore the role of meaning in the process of therapeutic alliance evolvement.

P37 - PSYCHOLOGISTS' OPINIONS ON THEIR USE OF INTERNET-RELATED TECHNOLOGY IN THE CONTEXT OF COUNSELLING OR THERAPY, FLANDERS, 2017

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Aims: To estimate the use of internet related technology (such as video conferencing and text messaging) by clinical psychologists in Flanders and to describe the perceived consequences of its use.
Methods: Data were collected with a cross-sectional internet survey. We contacted all Dutch-speaking members of the Belgian Federation of Psychologists (BFP) with a private practice who indicated that they use internet in their clinical practice and a random selection of those that did not indicate that they use internet in their clinical practice. A link to an anonymous internet questionnaire was delivered by email.
Results: Extrapolating from the sample, we estimate that 12% of the Dutch-speaking members of the BFP with a private practice use internet related technology in the therapeutic context as a substitute for a face-to-face encounter. Both groups of these psychologists used multiple devices in private life and in the therapeutic context, however mostly for making appointments. Laptops and smart phones were most popular in the therapeutic context. Both groups described both positive and negative conseqences, although positive consequences were more often mentioned by "users", negative consequences by 'non-users".
Conclusion: Currently only a limited number of psychologists in Dutch-speaking Belgium include internet-related technology into their therapeutical practice as a substitute for a face-to-face encounter, although they use this technology on multiple devices in their private and professional life. Both groups rather agree about the positive consequences, but differ more regarding the negative consequences they perceive.

P39 - THE STORIES OF OUR LIVES: THE SOCIAL FUNCTION OF COHERENT AUTOBIOGRAPHICAL MEMORIES IN RELATION TO PSYCHOLOGICAL WELL-BEING

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Autobiographical memory is a system that integrates past experiences into an overarching life narrative. We all remember episodes of our life in order to form some sense of self, guide ourselves through life and nurture social relationships. Research has proposed that the latter, social bonding, is a very important and relevant function of autobiographical memory. The value of a social network is illustrated as studies show how social support confers resilience to stress and is essential for maintaining good mental health. Furthermore, we know that there are a lot of individual differences in both remembering and sharing autobiographical memories with others, that are likely having an impact on the social function of autobiographical memory. Besides memory specificity, memory coherence has been related to both individual well-being as well as having positive social relationships. However, unlike what is the case for memory specificity, it is not completely clear yet which mechanisms underlie the relation between narrative coherence and mental health. We hypothesize that successful social functioning mediates the association between narrative coherence and psychological well-being. It might be the case that when someone is not coherent in the sharing of autobiographical memories, this will disturb the social function of autobiographical memory, which then may impact this person's psychological well-being in a negative way (risk factor for psychopathology).

P41 - PSYCHOLOGIST AT NEIGHBOURHOOD COMMUNITY CENTRES FOR THE ELDERLY BY OCMW GENT

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OCMW Gent (the Public Centre for Social Welfare) operates 10 neighbourhood community centres for the elderly (Dutch: lokaal dienstencentrum). Those centres experienced difficulties in reaching psychologically vulnerable elderly with the aim of helping them or directing them to mental healthcare. Therefore, in 2009, a psychologist was hired in 2 of the centres, as a pilot project in order to detect, to reach out to and to support psychologically vulnerable elderly.

Due to positive results a psychologist was placed in all ten community centres since January 2018. This combines to 3.25 FTE.

We focus on the one hand on low-intensive psychological guidance, enlarging resilience and/or referring to other appropriate care. On the other hand, we focus on sensitizing mental health problems.

Flexibility is key: besides in-house contacts, which vary from face-to-face consults to quick talks in a corridor or cafeteria, we also make home visits.

The community centres reach elderly by being visible in the neighbourhood, closely monitoring local residents and constantly lowering thresholds to services and social involvement. As we are part of this approachable setting, this makes it easier for elderly to engage with us. Moreover, operating closely together with caretakers who are familiar to them ensures we are part of their daily lives. This all led to a successful formula that reaches a broad range of elderly people, directly, or indirectly by coaching the care-takers or other people around them. We intervene at the tipping point between experiencing difficulties and needing specialised and more intensive mental health care.

P43 - PERSONALITY TYPES IN COMMUNITY DWELLING OLDER ADULTS

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In several studies an undercontrolled, overcontrolled and resilient personality type in adolescents and adults were found. Temperament based subtypes (Behavioral Inhibition System reactivity (BIS), Behavioral Activation System reactivity (BAS) and Effortful Control (EC)) have proven usefulness to identify underlying patterns of psychopathology in clinical samples. Therefore, in an earlier study we tried to corroborate these subtypes in a clinical sample of older adults. However, a resilient, dysregulated (high on psychopathology measures) and apathic type appeared. Only the resilient type showed high EC. The subtypes found in this study may be unique for a clinical population. The current study therefore examined temperament based personality types (BIS-BAS-EC) in community dwelling older adults (N = 58; Mage = 73,66; SDage = 6,786). Cluster analyses confirmed the personality types found in other age groups: a resilient, an undercontrolled and an overcontrolled type. Also, in the current sample the resilient type was the only cluster being high in EC. Furthermore, the resilient type demonstrated more adaptive (active) coping and less problems and complaints in comparison to the overcontrolled type. The results suggest that the overcontrolled cluster has the most dysfunctional characteristics (high neuroticism, low resilience and high on several symptom scales), whereas the resilient and undercontrolled cluster are more adaptive. Yet, the undercontrolled type scored higher on neuroticism and agoraphobia but lower on extraversion than the resilient type. We conclude that EC is the key concept differentiating resilient from more vulnerable types, so neurocognitive trainings addressing EC may be beneficial for the maladaptive clusters.

P45 - THE MINI-SQK (SEMANTIC KNOWLEDGE DETERIORATION): A NEW TOOL TO SCREEN SEMANTIC DETERIORATION IN ALZHEIMER'S DISEASE

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The breakdown of semantic memory appears early in Alzheimer's disease (AD). Lexico-semantic difficulties (e.g. difficulties in retrieving words and their meaning) are among the first symptoms of the disease. However, semantic knowledge is not always investigated in the neuropsychological assessment and is rather reflected through non-specific semantic measurements as through naming tasks. In order to screen this lexico-semantic decline, we propose the mini-SKQ, a Semantic Knowledge Questionnaire.

Mini-SKQ explores semantic impairments in AD patients with 12 questions selected from the SKQ, a previous and longer version of the test, proposed initially by Laiacona et al. (1993), and revised in a French version by Simoes Loureiro and Lefebvre (2015). We administer mini-SKQ to 77 participants, 39 AD and 38 healthy old people.

Results showed a significant difference between the groups : AD made significantly more errors than healthy old people. The Receiver Operating Characteristic (ROC) analysis established the optimal cut-off score of the mini-SKQ at 3 errors (sensitivity 61,4%, specificity 89,5%) in differentiating between AD patients and healthy old people.

The Mini-SKQ is a fast and easily administered questionnaire. Results indicated favorable indicators to screen semantic knowledge. These first observations underlines that mini-SKQ could potentially be attractive for screening semantic memory deterioration.

P47 - WEARABLE TECHNOLOGY FOR MENTAL HEALTH CARE: THE CAREWEAR IMPLEMENTATION STUDY

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Wearables collect reliable, continuous, and ecologically valid physiological data that can inform on both vulnerability factors and the process of recovery in mental disorders. However, current applications in this field are limited. Burnout and depression are highly prevalent mental disorders that have a large impact on psycho-emotional wellbeing and are associated with substantial societal and economical costs. The Carewear project aims to enrich current employment assistance programs and the treatment of depression with the implementation of wearable technology. We have developed an online software platform and accompanying clinical guidelines that allow health care professionals to use physiological data as a useful addition to their current practices. The current protocol describes the planned implementation study. Two use cases will investigate the added value of this implementation of wearable technology to help prevent burnout and treat depression. Clients will wear a wristband that registers heart rate variability, stress (through skin conductance and heart rate data), and physical activity. The physiological data can be inspected and completed on the Carewear platform and consequently discussed in regular consults. Taken together, the Carewear project aims to encourage the use of wearable technology in mental health by providing a user-friendly platform and clinical guidelines tailored to elevated stress and depressive symptoms, which makes physiological data accessible and comprehensible for both healthcare professionals and clients.

P49 - PERFORMING AN ENGAGING TASK DURING INTENSE PAIN DOES NOT PREVENT THE DEVELOPMENT OF SECONDARY HYPERALGESIA

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Secondary hyperalgesia is a hallmark of central sensitization and can be induced experimentally in healthy volunteers. Aim of this study was to investigate the unexplored but relevant possibility that the execution of a cognitive task during intense pain inducing sensitization can reduce or even prevent the increase in mechanical sensitivity typically observed in sensitized states. In experiment 1 (N=18) we validated a novel procedure to induce central sensitization in healthy volunteers by using low frequency stimulation (LFS) of the skin (Ikeda et al., 2006), applied with an electrode placed on the arm. Secondary hyperalgesia was tested with a 128 mN pinprick device applied onto both arms before LFS, and at 20 (T1) and 45 (T2) minutes after sensitization. Event-related potentials (ERPs), elicited by innocuous stimuli applied onto the LFS and the control arm, were recorded at all time points. Experiment 2 equaled Experiment 1, with the exception that participants (N=18) had to perform a cognitive task, namely the Flanker task, during sensitization. Both experiments showed that LFS effectively induced increased sensitivity to mechanical pinprick stimulation applied onto the sensitized arm. No effect of cognitive manipulation was observed in experiment 2. In contrast with previous studies using HFS (Ikeda et al., 2006) no increase in the ERPs was observed. We conclude that LFS of the skin can be used as a model to study sensitization. The development of increased mechanical sensitivity in spite of cognitive engagement raises questions about conditions in which cognition can be used to modulate pain.

P51 - Assessing Psychological Flexibility in Youth with Chronic Pain: A Multi-Method approach

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Although chronic pain can seriously impact children and adolescent's emotional, physical, social, and school-related functioning, the degree to which it does so often differs dramatically across individuals. Despite this variability, leading theories of chronic pain related disability, such as the Fear-Avoidance Model (FAM), have (a) almost exclusively focused on risk factors (e.g., catastrophic thinking, fear and activity avoidance) that increase the chances of maladaptive outcomes, and (b) remained comparatively silent to those processes that facilitate adaptive functioning in the face of persistent pain (i.e., resilience factors).

Our project aims to address this limitation by drawing on ideas from Relational Frame Theory, Acceptance and Commitment Therapy, and the FAM. We first examine current thinking surrounding a concept called psychological flexibility and then investigate to what extent it represents a potential resilience factor in chronic pain. Specifically, we present a multi-method approach that aims to assess the role played by psychological flexibility in pediatric chronic pain. We will discuss the strengthens and weaknesses of currently available measures of flexibility and offer the diary approach as one particularly useful means of assessing psychological flexibility in daily life.

P53 - LISTENING TO PREFERRED MUSIC REDUCES PERCEIVED INTENSITY OF PAINFUL LONG DURATION HEAT STIMULI

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Previous studies have suggested that music can induce analgesic effects, but the exact mechanisms remain elusive. At present it is unclear whether any tonic auditory stimulus presented in concomitance with a painful stimulus would be sufficient to modulate cortical activity related to the nociceptive stimulus, as well as the percept elicited by the stimulus. In the present study, to address this question, we have applied tonic heat pain stimuli to the forearm of healthy volunteers (N=21) while concomitantly presenting white noise, preferred music or no auditory stimulus. Participants had to rate the intensity of the stimuli on a 0-100 scale, with 50 being barely painful. Ratings were analysed using both a frequentist and a Bayesian approach. The results showed a significant difference in subjective pain ratings between the music condition and both the silence and white noise condition, but no difference between the white noise and the silence conditions. These results indicate that the soothing effect of music on pain should not simply be considered a distracting measure.

Developmental processes and disorders

12u00-12u50

P55 - THE ROLE OF PATTERNING IN CHILDREN'S CALCULATION

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Many studies have investigated how basic numeral processing contributes to individual differences in mathematics achievement, but less is known about how more complex mathematical reasoning processes, such as patterning, contributes to these individual differences. The goal of the current research was to investigate if an association exists between patterning and mathematical achievement. We also wanted to determine if this association is specific to the stimulus modality. Finally, we wanted to test whether these patterning skills contribute to the individual differences in mathematics above the well-established basic number processing skills. Sixty-five elementary school children (28 girls, M_{age} = 7.40, SD_{age} = .44) were recruited from three different international schools around Belgium. Children completed a patterning task (consisting of four different modalities: number, letter, time and rotation), a calculation task and various control tasks (processing speed, Raven's IQ and short-term memory). We observed significant correlations between patterning and arithmetic (r = .569, p < .001), between double-digit magnitude comparison (r = .566, p < .001) and between patterning and double-digit magnitude comparison (r = .330, p = .008). A follow-up regression which took age, sex, number processing, short-term memory and IQ into account further revealed that both patterning (β = .34, p = .005) and double-digit magnitude comparison

(β = .411, *p* = .009) emerged as unique predictors of calculation ability. Our findings suggest that patterning might play a unique role in children's ability to calculate. These findings have implications for the use and education of patterns with children in elementary school.

P57 - DOES THE NLV REPRESENT INTELLIGENCE?

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Introduction. To detect cognitive change after brain damage, it is important to know the level of premorbid intellectual functioning. A popular instrument is the "Nederlandse Leestest voor Volwassenen" (Schmand et al. 1992). In this test, 50 words with irregular pronunciation have to be read. The score on this test is considered as a good estimate of someone's premorbid IQ, due to high correlations with the verbal and total IQ estimates of the WAIS (correlations r>.75; Schmand et al. 1992). Despite some recent updates of the normative data (e.g. Bouma, et al. 1998), the validity of the test has not been re-evaluated.
Method. In two studies, the NLV and the WAIS-IV were administered. In Study 1, 30 participants (age range: 20y-30y) were tested, and in Study 2, 49 participants (age range: 45y-65y). We checked whether the score on the NLV correlated with the different IQ indices of the WAIS-IV.
Results. In the younger group, no correlations were found between the NLV and any of the WAIS-IV IQ indices. In the older group, the NLV correlated with Total IQ and the indices of Verbal Comprehension, Working Memory and Processing Speed. These correlations were all <.45.
Discussion. The NVL is not appropriate anymore to estimate premorbid IQ in young adults. For older subjects, the score on the NLV is still related to IQ but to a much lesser degree than initially. Given the low correlations (explained variance <20%), the NLV does not seem to be useful in this age group either.

P59 - The Developmental Path of the distinctiveness Heuristic in Children

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The primary aim of this study was to document the developmental course of distinctiveness effects throughout childhood. Specifically, we examined whether the reduction in false recognition rates that is traditionally observed in children after distinctive encoding could be explained not only by enhanced discrimination between studied and new items but also by the implementation of a conservative response criterion resulting from the use of metacognitive expectations about the quality of memories (i.e., distinctiveness heuristic). Two experiments were conducted in which children aged 4–5, 6–7, and 8–9 years old were asked to study a set of items presented either in pictorial (distinctive) or in word (less distinctive) form. In Experiment 1, pictures and words were displayed in two separate lists, a design that is supposed to favour reliance on the distinctiveness heuristic. In Experiment 2, the two types of stimuli were presented within the same list, a design that is supposed to make using the metacognitive heuristic ineffective. Overall, Experiments 1 and 2 provide evidence that children as young as 4 rely on the distinctiveness heuristic to guide their memory decisions, resulting in a reduction in the false recognition rate when items are presented using a pure-list design (Experiment 1), but not when they are presented using a mixed-list design (Experiment 2). The implications of these findings for our understanding of the development of metacognition and the involvement of metacognitive skills in children's memory performance are discussed.

P61 - THE DEVELOPMENTAL ADVANTAGE OF SLEEP ON DECLARATIVE MEMORY CONSOLIDATION: A BEHAVIOURAL COMPARISON BETWEEN ADULTS AND CHILDREN

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Introduction. Slow waves sleep (SWS) has been associated with declarative memory consolidation processes in children and adults. As children exhibit significantly larger amounts of SWS than adults, it has been hypothesized that memory consolidation may occur at faster pace during development. Methods. To test this hypothesis, we compared sleep-dependent memory consolidation performance between 15 children (7-12 years old) and 15 adults (20-30 years old) who learned associations between 50 non-objects and their functions. The effect of sleep was estimated by comparing immediate (evening, session 1, S1) and delayed (morning, session 2, S2) retrieval performance between groups. Results. A repeated measures ANOVA analysis with a within-subject factor SESSION (S1 vs. S2) and a between-subject factor GROUP (Children vs. Adults) showed no main effect of SESSION or GROUP (all $p>0.1$) but a significant interaction between the SESSION X GROUP factors ($F(1,24) = 6.42$; $p<.02$). Post hoc Tukey tests showed that adults had significantly poorer retrieval performance after sleep ($S2<S1$; $p<.04$) whereas in children, retrieval performance was similar between sessions ($S2=S1$; $p>.88$). Worth noticing, immediate retrieval performance did not differ between groups ($p>.2$). Discussion. Although a wake condition remains necessary to demonstrate the specific contribution of sleep (vs. an equivalent period of wakefulness) in our study, the results suggest that the consolidation of novel declarative associations may be faster, or at least more efficient, after one night of sleep in children compared to adults. We suggest that this effect may be related to more abundant SWS during development.

P63 - NEURAL REPRESENTATIONS OF FACIAL IDENTITY AND EMOTIONAL EXPRESSIONS IN YOUNG ADULTS WITH AND WITHOUT ASD

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Most people are experts in the recognition of faces and facial expressions. However, individuals with autism spectrum disorders (ASD) often have difficulties processing faces, both in recognizing facial identity and in interpreting feelings based on facial expressions. Even though these difficulties are included in the diagnostic criteria of ASD, the empirical evidence is mixed. The goal of this study is to quantify the quality of neural representations with regard to facial identity and emotional expression. Although there might not be a large difference between individuals with and without ASD at a behavioral level, we studied whether there may be differences at the brain level while looking at faces with different identities and different facial expressions. 52 young adults (age 17-23 years) participated in this study. While participants' brains were scanned, they were looking at short movies of a dynamic face, which gradually transitioned from a neutral to an emotional facial expression. The movies comprised four different identities and six different emotions. We performed multi-voxel pattern analyses (MVPA) based on a support vector machine to investigate whether different emotions and identities can be decoded on the basis of their neural activation pattern. Initial analyses show that neural activation patterns can be used to reliably decode facial identity and facial expression in occipito-temporal brain regions, both in adults with ASD and in neurotypical controls. In addition, there are no initial detectable differences in the quality of the neural representations and activation patterns between individuals with and without ASD.

P65 - EARLY SENSORY PREDICTION ERRORS ARE LESS MODULATED BY GLOBAL CONTEXT IN AUTISM SPECTRUM DISORDER

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Recent predictive coding theories of autism spectrum disorder (ASD) suggest that a key deficit in ASD concerns the inflexibility in modulating sensory prediction errors as a function of top-down expectations. As a direct test of this hypothesis, we used electroencephalography (EEG) to investigate whether local prediction error processing was less modulated by global context, in a group of 18 adults with ASD and 24 neurotypical adults. We used a hierarchical auditory oddball paradigm, in which participants listened to short sequences of either five identical sounds or four identical and a fifth deviant sound. The latter condition is known to generate the mismatch negativity (MMN) component, believed to reflect early sensory prediction error processing. Crucially, we manipulated the frequency of deviant sound sequences across blocks, as previous studies have shown that in blocks with frequent deviant sound sequences, top-down expectations attenuate the MMN. We expected that this top-down modulation of the MMN would be smaller in the ASD group. While both groups showed a MMN that was modulated by global context, this effect was indeed significantly smaller in the ASD group. These results provide an important piece of evidence for the central hypothesis of contemporary predictive coding accounts of ASD.

P67 - REMEDIATING DEFICITS IN REINFORCEMENT LEARNING IN ADHD BY STRETCHING THE RATIOS

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The capacity for learning or behavioral plasticity is one of the most basic human abilities. Reinforcement is a critical driver of the acquisition and continuation of instrumental behavior1. Children with Attention-Deficit/Hyperactivity Disorder [ADHD], however, demonstrate an altered reinforcement sensitivity compared to typically developing children [TD] and as a result show less learning particularly when reinforcement is intermittent rather than continuous. Behavior learned through partial reinforcement [PRF] extinguishes less easily after the removal of reinforcement than behavior acquired through continuous reinforcement [CRF], a phenomenon known as the Partial Reinforcement Extinction Effect [PREE]. A deficit in PRF learning may negatively affect children's ability to persistently acquire new adaptive behavior and develop a generalized capacity for perseverance5. In this study, acquisition and extinction under PRF and CRF is explored together with learning under increasing ratio strain, where the density of reinforcement is gradually decreased (stretching the ratios [StR]) as a potential means to remediate PRF deficits. In a newly developed task, 49 children with ADHD and 61 TD children (age: 8-12) were presented with different reinforcement schedules during acquisition, in a between-subjects design, followed by an extinction phase. Participants showed a PRF effect: ADHD and TD children learned more slowly and exhibited more persistence (reduced extinction) when behavior was acquired under PRF compared to CRF. In extinction, children with ADHD showed less behavioral persistence under PRF than TD controls. Learning under StR resulted in faster acquisition and reduced extinction in both groups, suggesting that StR can help to remediate PRF deficits in ADHD.

P69 - SPECIFIC EF-ABILITIES PREDICTING CHILDHOOD OBESITY

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One in seven youngsters has to deal with obesity and is at risk for continuing negative consequences in adulthood. Current treatments succeed in reducing weight, but research shows that long-term weight maintenance is difficult to achieve. Self-control plays an important role, given the omnipresence of unhealthy food in our obesogenic environment. Although self-control is a part of current intervention programs on a behavioral level, we see difficulties in translating to actual skills in resisting daily temptations. Deficits in "Executive Functions" (EF) can be a possible explanatory mechanism, since they are the underlying neuropsychological abilities that guide self-control in response to the environment. Research shows promising results in both investigating and training EF in obese populations. However, in obese youngsters, the role of EF-deficits is far more clear than in adults. Furthermore, it is unknown to what degree specific EFs play a separate role in explaining obesity patterns. In this study we examine the predicting role of several specific EFs (BRIEF-parents) in obese youth on both weight (BMI-SDS) and on maladaptive eating behavior (DEBQ). Our sample consists of n=600 overweight youngsters (8-18y) and data have only been recently analyzed with multiple regression analysis.

Cognitive processes

12u00-12u50

P71 - INDIVIDUAL DIFFERENCES IN SENSITIVITY TO EMERGENT FEATURES: EVIDENCE FOR A SHARED INTEGRATION PROCESS?

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People can perceive the same stimulus in different ways. This is readily apparent for the perception of color as illustrated by #TheDress, a photograph of a dress which appeared to be either black and blue or white and gold. Other variations between individuals could be more subtle. For example, variability in the perception of more basic features such as orientation, proximity, symmetry, curvature, etc. are not immediately apparent in everyday life. In this study we set out to test the extent to which individuals differ in processing the emergence of two such features, orientation and proximity. Based on a recent study by Hawkins et al. (2016), we used a change detection paradigm in which participants had to indicate whether sequentially presented dot stimuli had changed location or not. On some trials, this location change also included a feature change. We quantified individual differences in sensitivity to orientation and proximity using the capacity coefficient, a measure from Systems Factorial Technology (SFT), which compares processing of the whole stimulus to the parts presented alone. The goal of our study was to assess whether or not observers vary on a single continuum of sensitivity to these emergent features, which could indicate a general capacity for stimulus integration. We successfully replicated the results of Hawkins et al. for both features. When the location change did not

induce a feature change, the capacity coefficients were moderately correlated. In contrast, no strong correlation was observed for trials containing feature changes for proximity and orientation.

P73 - Feature priming elicits center surround inhibition

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Focusing attention on a specific feature not only facilitates processing of objects defined by the same feature, but also actively inhibits processing of similar, but not identical, features (Stormer & Alvarez, 2014). This "center-surround inhibition" mechanism serves to sharpen the demarcation between task-relevant and irrelevant items. Recently, it has been demonstrated that simply maintaining a certain feature in working memory produces a similar pattern of center-surround inhibition (Kiyonaga & Egner, 2016). Here we show that this attentional modulation can also be elicited by feature-based priming. Participants had to respond to the orientation of colored Gabor patches. The results showed that visual attention was biased towards (task-irrelevant) stimuli that exactly matched the color of previously selected items (i.e., feature priming). Crucially, we also found a negative bias for stimuli with a very similar color as previously selected items (i.e., the items within the inhibitory zone), while performance recovered for less similar stimuli (i.e., items just outside of the inhibitory zone). These results suggest that center-surround inhibition is a principal attentional mechanism that serves to suppress the perceptual processing of the most distracting stimuli.

P75 - Perceptual task relevance does not shape the time course of local/global perception of ambiguous motion displays

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Perceptual organization is not merely the result of stimulus characteristics determining perception in passive observers. Previous experience with an ambiguous stimulus can cause spontaneous changes in its perception (Anstis & Kim, 2011). Moreover, research has shown that an idiosyncratic preference in ambiguous stimuli can be modified by relevance in an auxiliary task (Chopin & Mamassian, 2010; 2011). In the current study, we were interested in baseline individual differences in so-called local and global percepts of an ambiguous motion stimulus and their malleability by relevance. In particular, we asked whether a previously observed spontaneous 'shift-to-global' can be attributed to task relevance of the global percept, exposure to the stimulus irrespective of the percept, or an interaction of both. Observers were presented with an ambiguous motion stimulus that could either be perceived as separate rotating dot-pairs (local) or as a configuration of two pulsating geometrical figures (global). In a learning phase, relevance of the percepts was manipulated and participants were divided in three conditions depending on the auxiliary task: active exposure, local task training, or global task training. In a pre- and post-learning test, participants reported their spontaneous percept for different dot distances and points of subjective equality (PSE) between local and global percepts were measured. We found that there is indeed a significant 'shift-to-global' for the perception of the ambiguous motion stimulus. However, perceptual task relevance did not seem to shape this shift, as its size did not differ between conditions.

P77 - RESPONSE COMPETITION IN CONTEXT-SPECIFIC PROPORTION CONGRUENT MANIPULATION

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Many situations require an efficient cognitive control system to monitor and adapt our behavior in situations of conflict. This adaptive behavior requires the efficient detection of conflicting situation (e.g. incongruency) in order to promptly react to incorrect actions and avoid new errors. This detection could be partially achieved by electromyographic signals. Indeed, about 15% of correct responses are preceded by an early, subthreshold EMG burst from the incorrect hand (Rochet et al., 2014). Such bursts, called "partial-errors" are regarded as a direct illustration of conflict resolution at the motor level (Allain et al., 2009). Interestingly, when asked to report these partial-errors, a large number of them pass unnoticed (Rochet et al., 2014). Detected or not, these "muscular hesitations" could be used to create the subjective feeling of conflict needed to implement cognitive control and adaptive behavior.

In a conflict task, the impact of conflicting situations (e.g. the congruency effect) depends on the relative proportion of congruent and incongruent trials: congruency effects are smaller in highly incongruent contexts and larger in highly congruent contexts (Lehle & Hübner, 2008). To investigate how partial-errors and their detection evolve with congruency proportion, we designed a priming task based on an 80/20 proportion congruent manipulation induced by contextual cues. EMG was recorded and participants were asked about their detection of partial-errors.

Preliminary results show that partial-errors measurements follow the results on reaction-times. Therefore, they seem to provide an interesting objective measure of response conflict. Analysis of the subjective detection of partial errors are now ongoing.

P79 - IMPACT OF THE NUMBER OF ALTERNATIVES IN A FORCED CHOICE RECOGNITION MEMORY TASK ON PERFORMANCE IN NORMAL AGING

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Forced-choice recognition memory tasks are often used to test visual episodic memory, notably to assess the effect of age on memory performance. However, no study has examined the impact of the number of alternatives on memory performance. In this experiment, we evaluated whether memory performance of young and older participants is influenced by, on the one hand, the number of proposed alternatives - two or three - and on the other hand the degree of similarity between the target and its lures. The study included 48 young participants and 43 healthy older participants. During the encoding phase, they saw 36 photographs of faces twice. During the recognition task, we asked them to choose the previously presented face among two or three photographs. Half of the target-lure sets were more similar than the other half (60% of common characteristics versus 40%). After the memory task, participants completed the Cambridge Face Perception Test to measure their capacity of perception and processing of faces. The analysis of correct recognition responses (ANOVA 2 (groups) x 2 (alternatives) x 2 (similarity) with repeated measures on the last two variables) showed that older adults had poorer performance than young adults and an effect of the degree of similarity but no effect of the number of alternatives. Interestingly, the age effect on recognition performance disappeared when controlling for face perception abilities. Thus, part of the difficulties in visual recognition memory for faces of older participants could be underpinned by weak perceptual capacities.

P81 - RATS REMEMBER: A QUEST FOR POST-RETRIEVAL AMNESIA

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Accumulating evidence suggests that a consolidated fear memory can return to a labile state upon retrieval, thereby opening a window for manipulation of this memory. Using specific interventions in this critical time frame, we may be able to modify or even erase the fear memory, for example by pharmacologically interfering with the protein synthesis required for restabilization. In a series of rat experiments, which were all pre-registered on the Open Science Framework, we investigated whether we could replicate this frequently observed effect and thus persistently attenuate a cued fear memory by systemic administration of a drug immediately after retrieval of this memory. We used several approaches, including different drugs (propranolol, a beta-adrenergic receptor antagonist (at a dose of 10 mg/kg) and rapamycin, an mTOR kinase inhibitor (20 and 40 mg/kg)) and several behavioral procedures with different fear conditioning parameters and various assessments of the persistence and/or return of fear (spontaneous recovery, renewal and reinstatement). Despite our efforts, we have, to date, not been able to find evidence for pharmacological induction of post-retrieval amnesia. We conclude that, what appears to be a robust effect in the scientific literature, once again proves to be difficult to replicate in an independent manner.

P83 - PHYSICAL AND ORDINAL DISTANCE EFFECTS IN VERBAL WORKING MEMORY

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Working memory refers to our ability to actively maintain and process a limited amount of information during a brief period of time. Crucial for our daily-life activities are not only the items to be memorized, but also their order. One behavioural signature of the processing of order information in working memory is the ordinal distance effect: when participants have to indicate whether two probes are presented in the same order as in the memorised sequence, they are slower when the probes are at close than at distant positions in the memorised sequence (e.g., Marshuetz et al., 2000). In these studies, items of the to-be-memorised sequence were simultaneously presented, such that ordinal distance and physical distance co-varied together. The larger the ordinal distance, the larger the physical distance. It is thus possible that physical distance contributed to the effect, although it was only attributed to the ordinal distance between items. In the present study, participants memorised sequences of letters. Similar to previous studies, items of the sequence were simultaneously presented. However, we manipulated the physical distance between them, such that for a specific ordinal distance, items could either be physically close or distant. Then, participants indicated whether pairs of probes were presented in the same order as in the memorised sequence. Finally, we verified that participants successfully memorised both the letters and their spatial locations in the sequence. This study is informative for future studies aiming to obtain a pure measure of order processing, without contamination of presentation layout.

P85 - Phonological similarity as an index of short term memory precision in aging

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Short-term memory (STM) precision is defined as the resolution at which items are stored in STM. It has to be distinguished from STM capacity which is characterized by a binary dimension: items are recalled or forgotten (Joseph et al., 2015). STM precision refers to the notion that all items are available in memory, but their representations vary in terms of accuracy of representation. Few studies have considered verbal STM precision and none of them has investigated STM precision from a lifespan perspective. The present study assessed individuals' sensitivity to gradients of phonological similarity between target and probe items in a short-term recognition task. We further aimed to investigate the quality of STM precision during aging.

A STM probe recognition paradigm was used. Groups of young and elderly adults were presented auditory lists of 6 words. After a short delay, probes identical to one of the words in the list or negative but phonologically close probes were presented the participants' recognition responses were recorded.

Using Bayesian ANOVA, we observed very strong evidence for a graded influence of phonological similarity on STM probe recognition. We observed no significant age effect on STM precision, which suggests that phonological precision as assessed by probe recognition is stable across adulthood.

This study suggests that phonological similarity is a useful variable for the investigation of the concept of precision in verbal STM It further indicates that the precision of verbal STM coding is preserved in aging, at least as regards the precision at the phonological level.

P87 - DO BASELINE SHIFTS IN INVERTED ENCODING MODELS OF FRONTO-PARIETAL POPULATION RESPONSES TO STIMULUS FEATURES REFLECT TOP-DOWN BIASES IN VISUAL WORKING MEMORY?

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Inverted encoding modelling (IEM) is a multivariate encoding technique, typically applied to fMRI data, that has been used to reveal population level neural responses tuned to visual stimulus features (e.g., motion-direction) in working memory (WM). Although this method has been primarily implemented to study changes in the tuning amplitudes of attended features, reflecting their representational fidelity, it is unclear what the changes in their baselines reflect. One hypothesis is that baseline shifts reflect the prioritised state of the attended stimulus category. To test this, we tracked the time-resolved amplitudes and baselines of the IEM reconstructions under different attentional prioritization states in occipital and fronto-parietal fMRI voxels. Two multi-feature objects (colored dots drifting coherently in one direction) were presented as memoranda and then followed by two levels of retro-cues. The initial "object cue" indicated which one of the two objects (and both of its associated features) would be relevant for that trial. Then, two serially occurring "feature cues" indicated which feature of the selected object would be tested by the impending probes. Despite the fact there could be no robust feature reconstructions obtained in the fronto-parietal voxels, higher baselines were observed for the cued compared to the uncued features. Crucially, these baseline shifts preceded amplitude changes in the occipital cortex where the robustness of uncued feature reconstructions decreased compared to cued features. Our findings suggest that the fronto-parietal IEM baseline shifts reflect the engagement of a top-down mechanism with which the representational fidelity in visual cortex is modulated.

P89 - THE AFFECTIVE TWITCHES OF TASK SWITCHES: TASK SWITCH CUES ARE EVALUATED AS NEGATIVE

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Task switching refers to the demanding cognitive control process that allows us to flexibly switch between different task contexts. It is a seminal observation that task switching comes with a performance cost (i.e., switch cost), but recent theories suggest that task switching could also carry an affective cost. In two experiments, we investigated the affective evaluation of task switching by having participants perform a task-switching paradigm followed by an affective priming procedure. Crucially, the transition cues of the task-switching paradigm, indicating task alternations or task repetitions, were used as primes in the affective priming procedure to assess their affective connotation. We found that task alternation primes were evaluated as more negative than task repetition primes. These findings show that task switching is affectively tagged, and suggest a potential role for emotion regulation processes in cognitive control.

P91 - The error-related negativity for error processing in interoception

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The error-related negativity (ERN) is an event-related potential in the electroencephalogram (EEG) observed within the first 0-100ms after commission of an error. It has been broadly studied in tasks using exteroceptive stimuli, while its relation to interoceptive stimuli is unknown. Since errors related to interoception might be more relevant to survival and negative affect, this study aimed to explore the ERN for errors related to interoceptive sensations (intERN), to compare the intERN with a commonly observed ERN related to exteroceptive stimuli (extERN), and to examine if the intERN shows specific associations with interoception-related negative affect. We studied the ERN using a respiratory occlusion task (intERN) and a visual flanker task (extERN) in 40 healthy volunteers during continuous 129 channel EEG recordings. Interoception-related negative affect was assessed with the Anxiety Sensitivity Index (ASI). The intERN was observed at fronto-central scalp positions when participants committed errors in the occlusion task. The intERN peaked significantly earlier than the extERN. Mean amplitudes of the intERN and extERN showed no significant difference and were not correlated. Additionally, higher levels of interoception-related negative affect were correlated with significantly greater amplitudes of the intERN, but with lower amplitudes of the extERN. The results demonstrate an error-related negativity EEG-potential that is related to interoceptive sensations. This intERN is not associated with a commonly observed extERN. Moreover, the intERN is related to higher levels of negative affect linked to interoception. The intERN might be a useful neural marker for future studies on interoception, negative affect and error processing.

P93 - DOES THE APPARITION MOMENT OF MENTAL FATIGUE VARY AS A FUNCTION OF AGE? INVESTIGATION OF TIME-ON-TASK EFFECT IN YOUNG, MIDDLE-AGED, AND OLDER PEOPLE

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Introduction. Young people show an increase in their reaction time (RT) between the first and the last 40 minutes of a 160-minute Stroop task (Wang et al., 2016). Our study is aimed at replicating Wang et al. (2016) results but also to test for the first time this Time-on-Task effect in middle-aged and older people.
Method. Twenty-one Young (MAge=21.29), 17 Middle-aged (MAge=50.47), and 17 Older (MAge=65.06) performed a 160-minute Stroop task comprising facilitator (FA), interfering (I), and neutral (NE) items, these later ones systematically appearing one out of two. The total duration was divided into eight blocks of 20min. with the elimination of the Block 0 (habituation block). 3(Groups) X 7(Blocks) repeated measures ANOVAs were carried out on mean and coefficient of variation (CV) of the RT.
Results. Mean. The Young showed a RT increase between the 1st and the 5th block on NE items (p=.026) while this increase appeared in Block 4 for Middle-aged (p=.001) and Older (p=.042).CV. Young showed an increase in CV between the 1st and the 7th block (p=.002) on NE items while Middle-age showed this increase on the 6th block (p=.03). By contrast, Older did not significantly vary in their CV.
Discussion. Mental fatigue triggered by Time-on-Task in aging seems to manifest by a general slowdown of information processing: Middle-aged and Older being more quickly exhausted as compared to Young. However, while Young and Middle-aged seem to be affected in their CV, more advanced aging seems to preserve intra-individual variability from Time-on-task.

P95 - AUTOMATIC EFFECTS OF MOTOR IMAGERY

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Motor imagery refers to a dynamic state during which the representation of a given motor act is internally rehearsed within working memory without any overt movement. Although motor imagery is widely used for optimizing a variety of complex skills, nothing is known about the power of motor imagery in inducing automaticity. The current study presents a series of experiments in which we investigate this issue by elaborating previous techniques, which were introduced to investigate automatic effects of new instructions. In a first experiment, we compared automatic effects of new instructions that were verbally rehearsed, overtly practiced or covertly practiced. Only overtly and covertly practiced instructions led to automatic effects. In a second experiment, the effect of motor imagery was investigated, when an additional instruction was provided, which indicated that no partial movements could be made during motor-imagery training. Yet, we again observed automatic effects of instructions which were only practiced covertly. Furthermore, partial movements did not have an additional value in inducing these automatic effects. We conclude that episodic traces of new instructions can be formed on the basis of motor imagery, which are retrieved automatically even if these instructions no longer have to be executed in the near future.

P97 - INVESTIGATING THE INFLUENCE OF TRANSCUTANEOUS VAGAL NERVE STIMULATION (t-VNS) ON LEARNING IN A PREDICTIVE LEARNING TASK.

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Background: T-VNS is associated with faster extinction learning in humans. Findings from animal studies employing invasive VNS suggest an enhancement in central Noradrenaline (NA) as a possible mechanism underlying such finding. In humans, noradrenergic manipulations influence learning speed in classical conditioning and predictive-learning tasks . Furthermore, NA is implicated in error-driven attention, a core process in associative learning (Pearch-Hall theory). Aims: To investigate the effect of t-VNS on reversal learning, error-driven attention, and noradrenergic activity employing a predictive-learning task sensitive to noradrenergic manipulation. Methods: 60 participants will be randomly allocated to receive individually calibrated stimulation on either the cymba concha (t-VNS) or lobe (sham) of the left ear. Participants' task is to make predictions about stimuli related outcome and learn such associations. Acquisition is followed by reversal learning. The stimulation is administered prior and during reversal learning. Number of errors and phasic change in pupil size (PS) in anticipation of the outcome (error-driven attention) are measured. Tonic PS and salivary alpha-amylase (SA; as noradrenergic biomarkers) are assessed three times: prior acquisition, prior and after stimulation. Hypothesis: Compared to the sham group, we expect the t-VNS to make fewer errors, prompt higher phasic change in PS in the early phase of reversal learning, and higher level of noradrenergic activity as measured by tonic PS and SA. We expect error-driven attention to mediate t-VNS effect on learning. Implications: This project may provide evidence that NA-enhancement underlies effects of t-VNS on associative learning. Funding: the ''Asthenes'' long-term structural funding (METH/15/011) – Methusalem grant.

P99 - The relation between cognitive flexibility and arithmetic operations

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Arithmetic's abilities are required when solving mathematical problems such as "7x8" or "15+3" and are important for many everyday life situations. Executive functions have been proposed to play an important role in mathematics achievement (e.g. Bull, Espy, & Wiebe, 2008).

The present study focusses on cognitive flexibility, our ability to switch between different mental sets, tasks or strategies (Diamond, 2013; Miyake & Friedmann, 2012). That is, we investigated whether cognitive flexibility is influenced be the type of operation being switched from. Across different blocks, participants randomly switched between different types of operations (e.g. +, -, x, :). First, reliable switch costs were observed across different operations. Second, results also demonstrate that the switch cost interacts with type of operation. We conclude that cognitive flexibility is influenced by the type of operation executed but also by the relation between the previous and the current arithmetic operation.

P101 - GETTING TO THE BOTTOM OF THE LINK BETWEEN NUMEROSITY PROCESSING AND MATHEMATICAL ACHIEVEMENT

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Several studies using numerosity comparison tasks with dot arrays, have found a positive correlation between numerosity processing abilities and mathematical proficiency. However, some studies argued that this relation is mediated by inhibitory control. More specifically, it is proposed that on incongruent trials (i.e., trials on which the less numerous array has the larger cumulative surface area) inhibition is needed to suppress the irrelevant non-numerical information. The inconsistent findings are possibly due to methodological differences, like different protocols to create the dot arrays, or different mathematical tests and inhibition tasks. To clarify these inconsistencies, we are currently conducting a study with adults in which we will administer two numerosity comparison tasks (Halberda, Mazzocco & Feigenson, 2008; Gebuis & Reynvoet, 2011). In addition, we will administer four different inhibition tasks assessing cognitive inhibition (numerical and non-numerical Stroop tasks) and response inhibition (numerical and non-numerical Go/No Go tasks). We will also administer three different mathematical tests, assessing arithmetic fact retrieval, calculation, and word problem solving. Finally, we will assess math anxiety because math anxiety has been shown to influence numerosity processing, mathematics performance and inhibitory control. We will investigate whether the numerosity comparison tasks are related to the different mathematical tests, and if so, whether this relation is mediated by any of our measures of inhibitory control. All data will be collected and analyzed by the time of the conference.

P103 - Are numerosity, size and spacing processed independently?

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Dewind et al (2015) proposed a method to orthogonally manipulate numerosity and two dimensions, labeled Size and Spacing, mathematically derived from the continuous visual properties of dot collections. They showed that both dimensions influences numerosity judgments. Nevertheless, they did not examine the impact of numerosity on the non-numerical features. In the present study we studied the three dimensions by asking participants to detect changes in either one. The experiment consisted of a Go/No-Go task with collections of dots (ranging from 13 to 44) created following Dewind et al (2015). Participants had to press a button whenever they detected a change in numerosity, a change in Size or a change in both. Changes either deviated by a small or a larger ratio. Our results showed reciprocal influences of Size (Spacing) on numerosity as well as numerosity on Size (Spacing). It suggests thus an influence of the non-numerical features on numerosity judgements, as found by Dewind et al (2015), but also an impact of numerosity on the judgements of non-numerical features. Thus, even if we can make stimulus properties mathematically orthogonal it doesn't mean that they are treated independently.

P105 - The effect of the target-distractor distance on spontaneous neural encoding of spatial position

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In an EEG study by Foster et al., 2017, spontaneous encoding of the spatial position of items in visual Working Memory (WM) was reported in alpha oscillations. In their experiment, observers saw two colored circles, each containing a digit. They were instructed to remember and report the color of the target (the circle with the larger digit) after a delay period. The spatial position of the target was encoded significantly stronger than distractor (associated to WM). Further analysis of their study (available at https://osf.io/vw4uc/) was performed by employing Inverted Encoding Model combined with the leave-one-out technique which gave an encoding accuracy for each item separately in each trial. This revealed that the target-distractor distance affects the spatial position encoding. The more distant the two items, the better the target is encoded in comparison to the distractor. Moreover, investigating the effect of the relative location of two items (both in same or cross hemisphere) revealed that locating in the same hemisphere, neural encoding of target and distractor are not different. However, when they were located in different hemispheres, the target was encoded significantly stronger than distractor. Considering both distance and hemisphere effects, stronger encoding of the target was observed only in the cross condition where the distance effect was also present. The distance effect was missing in the same condition. Overall, the target is encoded stronger than distractor only when they are located in different hemispheres. In this condition, when the target-distractor distance increases, target encoding is stronger than distractor encoding.

P107 - ASSESSING EYE GAZE SENSITIVITY USING FAST PERIODIC VISUAL STIMULATION EEG AND EYE-TRACKING

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Face processing is a vital skill for typical development of humans. The face provides a wide variety of information, such as identity, mood, etc. Processing this information is necessary for adequate social interaction and communication. Particularly, information derived from the eyes, such as eye-gaze direction, has an important role in non-verbal communication. Here, we developed an experimental paradigm to assess behavioural preference and neural sensitivity for directed versus averted eye gaze in adults and infants. We used fast periodic visual stimulation (FPVS) in combination with electroencephalography (EEG) and eye-tracking. The general principle of FPVS EEG is that the periodicity of the electrophysiological response on the scalp corresponds exactly with the frequency of the visual stimulation, allowing frequency-tagging of the visual input. In particular, we presented two streams of visual stimuli next to each other at different frequencies: one stream of faces was presented at 10 Hz, the other at 12 Hz. One stream comprised faces with a directed gaze and the other faces with an averted gaze, counterbalanced across frequencies and positions. Hence, by quantifying the EEG responses corresponding to the particular frequencies, we can determine the preferential neural processing of the concurrent visual stimuli, and investigate to what extent this is related to simultaneous eye-tracking data. Preliminary results show that adults display a significantly higher neural response (located in medial occipitotemporal regions) to faces with directed as compared to averted eye gaze. At the BAPS conference, these data will be complemented with identical experiments in 5-to-10 months old infants.

P109 - SPATIO-SPECTRO-TEMPORAL CHARACTERISATION OF INDUCED BRAIN PROCESSES ASSOCIATED WITH A SILENT VERB GENERATION TASK

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Introduction. Silent verb generation (VGEN) has been described as a gold standard task to map expressive language brain areas. While fMRI studies localized the cerebral correlates of VGEN processes in fronto-temporal areas, MEG studies mainly focused on identifying the associated time-frequency patterns within these a priori cortical regions. Here, we investigate the spatio-spectro-temporal dynamics of expressive language processing during a VGEN task using an extensive analysis of induced responses, without prior assumptions.

Methods. MEG activity was recorded in 12 healthy right-handed adults while they were silently generating verbs (action-words) upon confrontation with pictures of familiar items. Induced event-related (de)synchronization (ERD/ERS) were obtained using time-frequency analysis. Significance of the group-level contrast with surrogate ERD/ERS data built from resting-state recordings was derived using a non-parametric clustering approach to take the spatio-spectro-temporal comparisons into account.

Results. We first observed a sustained ERD pattern in the beta-band (15—25Hz) over the left hemisphere (200ms—1s) and a transient beta-ERD in the right posterior regions (200—300ms). A second ERD pattern was identified in the alpha-band (8-10Hz) over the left centro-posterior areas (400ms—1s) while a

late transient alpha-ERD was observed in the right posterior areas (600-900ms). Finally, a pattern of ERS was observed in the beta-band over the right anterior and central regions (500-900ms) and in the gamma-band (45—70Hz) over the left posterior areas (600-800ms).

Discussion. This exploratory analysis therefore suggests that VGEN involves a complex and bilateral widespread dynamics of brain ERD/ERS processes in the alpha, beta and gamma frequencies.

P111 - TRIAL-TO-TRIAL VARIABILITY OF SPONTANEOUS NEURAL OSCILLATIONS PREDICTS THE TEMPORAL SENSITIVITY OF MULTISENSORY PERCEPTION

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Here we present evidence from 40 participants that both power and instantaneous frequency of pre-stimulus alpha oscillations predict the temporal sensitivity of audiovisual perception from trial to trial. Alpha oscillations reflect fluctuations in the excitability of the cortex. In detection tasks, higher alpha power predicts lower sensitivity to visual near-threshold stimuli and less susceptibility to multisensory illusions. In turn, higher alpha peak frequency predicts higher temporal sensitivity of both visual and audiovisual perception. In this study, we went beyond detection of near-threshold or illusory stimuli. We measured the temporal sensitivity of audiovisual perception using a temporal order judgement (TOJ) task with above-threshold auditory and visual stimuli. We measured EEG and tested whether task performance could be predicted by pre-stimulus oscillations on a trial-by-trial basis. In TOJ tasks, the behavioral measure of temporal sensitivity is typically not obtained per trial, but over a large amount of trials. However, by applying a Jackknife procedure adapted for linking single-trial pre-stimulus activity to psychometric measures (Benwell et al., 2017) we obtained a measure of sensitivity for each trial. We found that at alpha-range frequencies in the pre-stimulus interval, higher posterior power predicted lower temporal sensitivity of audiovisual perception from trial to trial. Additionally, higher instantaneous frequency of posterior alpha oscillations predicted a higher temporal sensitivity of audiovisual perception. These results show that temporal sensitivity for above-threshold multisensory stimuli changes spontaneously from moment to moment and is likely related to fluctuations in cortical excitability.

P113 - WHY RESEARCHERS SHOULD ALWAYS PREFER THE W-TEST TO THE F-TEST IN ONE-WAY ANOVA DESIGNS

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When comparing independent groups, researchers in psychology commonly use Analysis of Variance (ANOVA), which compare groups based on their means and assumes data is normally distributed, and variances are equal across conditions. When these assumptions are not met, the classical ANOVA (F-test) can be severely biased, which leads to invalid statistical inferences. However, despite their importance, test assumptions are rarely explicitly considered in scientific articles. We discuss why the assumptions of normality and homogeneity of variances will often not hold in psychological research. We explain when and why this is problematic, especially for the assumption of homogeneity of variances. Our simulations show that Welch's ANOVA (W-test) controls the Type 1 error rate better than the F-test when the assumption of homogeneity of variance is not met, and loses little robustness compared to the F-test when the assumptions are met. Because assumption tests for the equality of variances often fail to provide an informative answer, we argue that the W-test should be a preferred choice than the F-test when comparing means.

P115 - IS THE EXPERIENCE OF TIP-OF-THE-TONGUE CONTAGIOUS?

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The Tip-Of-The-Tongue (ToT) reflects the "feeling that accompanies temporary inaccessibility of an item that a person is trying to retrieve". It is a universal and frequent phenomenon, affected by different factors such as age, bilinguism, emotional state, etc.

An unpublished study (Laseur, 2011) showed that when asked about their recent experience of ToT, no less than 93,3% of the respondents remembered having experienced a ToT when someone else was explaining their own ToT. In 2 studies we investigated whether indeed ToTs might be modulated by social interactions. We conducted 2 studies manipulating interpersonal contexts. In each study, an accomplice to the experimenter 'experienced' ToT's while we measured the frequency of the ToT of the real participant who had to respond to the same question, immediately following the accomplice.

Our hypotheses were confirmed. In both experiments, the frequency of the ToT experience increased in the participants when the accomplice indicated to have a ToT experience relative to the situation where the accomplice indicated to know or not to know the answer to the question. These results suggest that the ToT experience is a contagious phenomenon. Theoretical implications of these findings will be discussed.

P117 - THE REPRESENTATION OF SYMMETRY IN MULTIVOXEL RESPONSE PATTERNS AND FUNCTIONAL CONNECTIVITY THROUGHOUT THE VENTRAL VISUAL STREAM

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This study investigates the representation of symmetry in the ventral visual stream, using MVPA and functional connectivity analyses.
Fourteen participants observed bilateral symmetric and non-symmetric dot patterns in a MRI scanner. V1, V2, V3, V4 and object-selective LOC were defined in each subject. Responses to symmetric compared to non-symmetric stimuli were enhanced in V4 and LOC (both $p<.001$), but not in earlier regions (all $p>.1$). In V1 and V2, decoding accuracy across categories (symmetric versus non-symmetric) did not differ from accuracy within categories (all $p>.05$). However, accuracy depended heavily on whether or not the stimuli shared a part (all $p<.0001$). In LOC, decoding accuracy was higher across categories than within categories (both $p<.001$). Within categories, two symmetric stimuli were more discriminable than two non-symmetric stimuli ($p=.046$). Moreover, sharing a part hampered decoding for two non-symmetric stimuli ($p=.019$), but not for symmetric versus non-symmetric stimuli ($p=.78$). An intermediate pattern was found in V3 and V4. Like LOC, these regions showed better decoding for stimuli across category than for two non-symmetric stimuli (both $p<.05$). Conversely, like in early regions, classification was better when stimuli did not share a part (all $p<.01$). Interhemispheric functional connectivity was higher between homotopic areas during symmetry perception ($p=.019$). This improved coordination between hemispheres might aid the integration of stimulus parts into a whole. Together, these results suggest that neural representations gradually change from part-based to holistic throughout the ventral visual stream, with a more holistic representation for symmetric compared to non-symmetric stimuli in the highest visual regions.

Abstracts

Poster
Session 2

14.10-15.00

Social and interpersonal processes

14u10-15u00

P2 - MOTIVATION AT WORK: THE IMPORTANCE OF GENDER EQUALITY IN THE CORPORATE CULTURE

Danthine Eléonore[1], Crokaert Fanny[1], Closon Caroline[1], & Van der Linden Jan[1]

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Despite the number of laws and collective agreements applying to the world of work, gender discrimination is still present. For decades, women have struggled to enter the labor market on an equal footing with men. Recently, the term "feminization" of the labor market is constantly cited when the issue of gender at work is discussed. Nevertheless, the glass ceiling phenomenon is still a burden for women. Accordingly with the problem of gender discrimination, this presentation focuses on the effects on the female work motivation. Work motivation is a key element for workers wellbeing and plays an important role in the employees' performances and productivity. In order to understand this problem closely, the study used on online questionnaire with several self-reported Likert scales: perceived individual and group discrimination, group identification, work motivation, job satisfaction and the tendency of adopting feminine or masculine behavior. A total of 60 Belgian female workers fully completed the survey. Results show that when women declare more feminine behavior, they perceive more group discrimination. In addition, women who perceive themselves discriminated against will be less motivated at work, and subsequently less satisfied. In conclusion, results demonstrate that the issue of

gender discrimination has a real impact on women's performance. Businesses, therefore, have every interest in doing anything to reduce or even ban any kind of discrimination. A non-discriminatory context is conducive to the enterprise but also to the employees as the perception of discrimination influences satisfaction.

P4 - INEVITABLE CHANGING SOCIAL NORMS' EFFECT ON MEN'S ATTITUDES TOWARDS FEMALE DOMINATED COMMUNAL ROLES

Sanne Van Grootel[1], Colette van Laar[1], Loes Meeussen[1], Toni Schmader[2], & Sabine Sczesny[3]

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Research has well-documented the effects of stereotypes on women, but men too are negatively affected by stereotypes. In particular, stereotypes prescribing men to be highly agentic and not too communal affect the precariousness of the masculine identity: it is easily threatened, easily lost, and difficult to earn. Threatened masculinity can have behavioral consequences; men often shy away from traditional female roles in HEED (Healthcare, Early-Education, Domestic sphere) as these do not fit within the social construct of masculinity. The current studies tackle exactly this: how do different social norms influence male attitudes towards communal roles? Study 1 (N=200) determined that men perceive masculinity to be precarious and prescribe more traditionally normative traits to other men. In study 2 (N=114) participants were presented with a traditional norm (stereotypical norm that encouraged traditionally-male behavior), or changing norms condition (norm that discussed the discrepancy between the stereotypical-masculine norm vs. new communal norm). Results showed traditional norms lead men to have more traditional communal attitudes – they self-stereotype as less communal and expected more backlash for engaging in communal roles. Moreover, those in the changing norms condition did not self-stereotype as less communal but reported a higher expectation of backlash. Study 3 (N=200) expanded on this by including two additional conditions, a communal norm (norm that encouraged communal behavior) and a compatibility condition (norm that discussed the compatibility of traditional-masculine and communal traits). In line with study 2, results indicated that being exposed to a norm including communion increases men's communal attitudes and interests.

P6 - EFFECTS OF SEXUALIZED VIDEO GAMES ON ONLINE SEXUAL HARASSMENT

Tania Noël[1] ,Jonathan Burnay[1], Brad Bushman[2], & Frank Larøi[1,3,4]

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Online sexual harassment towards women is a common problem. Yet, little is known about the specific factors leading to this type of harassment. Based on cognitive neoassociationistic theory (Berkowitz, 1990), this study aims to examine the impact of sexualized content of video games on online sexual harassment. It was hypothesized that exposure to sexualized female video game characters will increase sexual harassment towards real females, but decrease sexual harassment towards male targets. In order to test this hypothesis, 111 participants were invited to play a video game, where sexualization had been manipulated by changing the outfit of the female characters (fully clothed vs. wearing a revealing swimsuit). Afterwards, in order to measure sexual harassment, participants were asked to interact online with a partner (female partner vs. male partner), and were allowed to send either a sexist joke or a non-sexist joke. Degree of sexual harassment consisted of the number of sexist jokes that the participant sent to their partner and who reacted negatively in regards to the joke. Several other variables were included as co-variates: trait aggressiveness, degree of hostile and benevolent sexism, and degree of online disinhibition. In accordance with the hypothesis, the results showed that playing a video game with a sexualized female avatar increased sexual harassment behavior towards women, but only among male players. These results indicate that the sexualization of female characters in a video game could be a sufficient condition to provoke online sexual harassment towards women.

P8 - WHY DO PSYCHOPATHIC INDIVIDUALS LIE IN EVERYDAY LIFE? A DIARY STUDY ON LYING FREQUENCY AND LYING MOTIVES IN PSYCHOPATHY

Dagmar Stockman[1], Bruno Verschuere[2], Lesley Verhofstadt[1], Craig Neumann[3], & Kasia Uzieblo[1, 4]

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Dishonest and lying behavior are considered as core characteristics of psychopathy. Previous research has indeed demonstrated a link between psychopathy and lying frequency (e.g., Halevy et al., 2014). However, the motives for lying in psychopathic individuals are still unexplored. Some scholars argue psychopathic individuals tend to lie for no particular reason (Jonason et al., 2014), whereas others claim that a variety of motives may underlie the lying behavior in psychopathy (e.g., to obtain a reward; Spidel, 2002). To obtain an in-depth insight into lying motives in individuals with psychopathic traits, a diary study was conducted in a community sample (*N = 199;* 86.3% female). Participants provided questionnaire data (Self-Report Psychopathy scale Short Form (SRP-SF; Paulhus et al., 2016), and the Triarchic Psychopathy Measure (TriPM; Patrick, 2010)) and then completed a five-day lying diary on lying frequency and lying motives. In line with previous studies, our findings showed a positive association between psychopathy scores and participant's daily reports of lying frequency. Our results on lying motives reported on a daily basis differed across psychopathy measures, with both the SRP-SF and TriPM total scales being associated with "lying to obtain rewards", whereas only the SRP-SF total scale was related to "lying to prevent punishment". The TriPM total scale was also associated with reports of "lying for no reason". Our findings point to the need of investigating the specific contexts in which psychopathic individuals lie, in order to gain a better understanding of the use of lying motives in psychopathy.

P10 - THE TRANSMEMO PROJECT: AT THE CROSSROADS OF FAMILY MEMORY AND HISTORY

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Autobiographical memory is inherently social; we share memories to teach, bond or provide a sense of identity. But not all types of personal memories are disclosed, and the receiver of the memory is often carefully chosen. Some memories are deeply personal while others are anchored in a broader social context and interpreted or reconstructed through the lenses of history. It is in this liminal space that lies family accounts of what happened to relatives. These stories can be transmitted to members of the family for many reasons, but sometimes they also go unmentioned.

In our TRANSMEMO project, cognitive and social psychologists teamed up with historians to investigate how personal memories and family stories of World War Two events are transmitted and interpreted across generations in Belgian families of resisters or collaborators. We have used a method combining semi-structured interviews with Likert-type questionnaires in order to evaluate what members of three generations know about their family stories, the importance they attach to this knowledge, their relationship with one other and their views on Belgium and its historical past. In this presentation, we will present preliminary results on how each generation perceives and interprets the past as well as on its personal and social impacts. In particular, we will examine the different functions of these memories and how they can shape a family narrative or modify the way other members of the family are perceived and understood.

P12 - LONG-TERM EFFECT OF CHILDHOOD ABUSES ON PARENTING COMPETENCIES: HOW THE SELF-EFFICACY BELIEF OF PARENTS WHO WERE ABUSED AS CHILDREN IS MODULATED BY SOCIAL, CONJUGAL AND FAMILY SUPPORT?

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Analyze the effect of abuse on self-efficacy belief of parents who were abused when they were child and analyze how social, conjugal and family supports influence the effect of child abuse on parental self-efficacy belief. We diffused an online survey. Participants answered to the "Childhood Trauma Questionnaire", the "Questionnaire d'Auto-Évaluation de la Compétence Parentale", the "Parental bonding instrument", the "Echelle d'Ajustement du couple" and the "Echelle des Provisions sociales", which respectively evaluated the abuse during childhood, the self-efficacy belief, the parent's presence during childhood, the conjugal satisfaction and the social support. We collected 828 complete protocols which showed that self-efficacy belief was lower for parents who were abused during their childhood. Nevertheless, only one of two components of the self-efficacy beliefs was altered by childhood maltreatment: indeed, the efficiency belief was not altered by childhood maltreatment while the satisfaction about their relationship with their child was lower for parents who were abused during their childhood. Moreover, the self-efficacy belief of parents who were sexually abused but who were not victim of any other kind of abuse (physical, psychological and neglect) during their childhood was not significantly different than the self-efficacy belief of parent who were not abused during their childhood. On the other hand, it was higher than the self-efficacy belief of parents who were victim of other kinds of abuse. A main difference between sexual abuse and the other kinds of abuse (physical, psychological and neglect) comes from elements of family and social context in which they grew up.

P14 - Terror Management and Religion: A Cross-Cultural Analysis between the United States and Brunei Darussalam

Shee Ling Neo[1] & Ying-yi Hong[2]

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Terror Management Theory (TMT) suggests that religious worldviews help to assuage the terror of mortality by providing individuals with a sense of immortality.

However, little empirical research has examined the role of religion and external social norms in mitigating defensive responses toward mortality threat. In this paper, we attempt to examine how religious and non-religious people in the United States (a secular state with moderately tight religious norms) (Study 1) and Brunei (a religious state with very tight religious norms) (Study 2) respond to mortality salient manipulation in terms of their support for fundamentalism and nationalistic feelings.

Here, we propose that the expression of religion through these attitudes is dependent on the prevalent religious norms of the country, regardless of whether the country is secular or religious. In both studies, when mortality is primed, religious people are more likely than non-religious people to exhibit increased support for fundamentalism and nationalistic feelings. These findings provide converging evidence for the impact of religiosity and social norms on people's reactions towards mortality salience manipulation.

P16 - NO MEMORY FOR MEAT: IDEOLOGICAL MEMORY BIAS ABOUT ANIMAL SENTIENCE AND INTELLIGENCE

Victoria C. Krings[1], Kristof Dhont[1], & Robbie Sutton[1]

[1] University of Kent, UK

Prior research has shown that people tend to disregard morally relevant information about food animals to avoid feeling morally conflicted. Extending this work, we conducted two studies to test whether misremembering information about animal sentience and intelligence is ideologically motivated. Specifically, adherents of right-wing ideological beliefs, i.e. social dominance orientation (SDO) and right-wing authoritarianism (RWA), typically show greater acceptance of animal exploitation and higher levels of meat consumption. Therefore, we hypothesized that especially those higher on RWA and SDO would be ideologically inclined to show memory biases when recalling morally relevant information about food animals (e.g. pigs). In Study 1 (N = 253 British adults), participants were presented with information on pigs' intelligence and sentience, and later had to complete both free and cued recall tasks. As expected, participants systematically misremembered (i.e. underestimated) pigs' intelligence and attributed fewer emotions to pigs. Furthermore, RWA and to a lesser extent SDO, were significantly related to these memory biases. Using a between-subjects design, Study 2 (N = 298 British adults) extended these findings by investigating memory performance for information about pigs as compared to dogs. The findings confirmed the associations between RWA and memory errors, further showing that RWA predicted the recall of fewer emotions of pigs, but not of dogs. Taken together, this research provides, for the first time, evidence for the existence of ideologically motivated memory bias for morally relevant information about food animals. Implications for animal advocacy campaigns are discussed.

P18 - THE HUBRIS HYPOTHESIS AND THE DANGERS OF BRAGGING. THE DIRECTION AND FRAMING OF SELF-OTHER COMPARISONS DETERMINE OBSERVERS' RESPONSES TO EXPLICITLY COMPARATIVE BRAGGING

Bien Cuyvers[1] & Vera Hoorens[1]

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Why do observers reject individuals who brag explicitly comparatively (e.g., "I am better than others") even though they accept individuals who brag superficially non-comparatively (e.g., "I am good")? The hubris hypothesis states that observers infer from explicitly comparative bragging that the braggart probably views others negatively. In a second step, they infer that the braggart therefore probably views them (the observers) negatively, too. The hypothesis states that it is this inferential chain, rather than the inference of an inflated self-view on the side of the braggart, that provokes rejection. We tested this hypothesis in a preregistered experiment (N = 256) where observers judged the claimant of an explicitly comparative self-superiority claim (explicitly comparative bragging) in the domain of morality, and where we manipulated the comparison direction (self-to-others, others-to-self) and the framing of the comparison dimension (honest/trustworthy, dishonest/untrustworthy). Supporting the hubris hypothesis, (a) observers judged the claimant even more unfavorably if s/he compared others to the self (and thus emphasized the comparison others) than if s/he compared the self to others, and (b) this effect was mediated by inferences about the claimant's view of others and of the observer. Observers also judged the braggart more unfavorably if the comparison was framed negatively rather than positively. This effect was mediated by inferences about the claimant's self-view and of the observer. Remarkably, observers claimed to be more moral than others right after having rejected a braggart who had claimed the same, and they particularly did so after having read a negatively framed claim.

P20 - COGNITIVE CONTROL TRAINING AS INTERVENTION FOR REPETITIVE NEGATIVE THINKING

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Regaining control over Negative Repetitive Thinking (RNT: Ehring & Watkins, 2008), is easier said than done. The concept of Cognitive Control is very useful in this context, as it refers to a set of executive functions that are involved in managing information in working memory, which is crucial, given the limited capacity of this system (Joormann & D'Avanzato, 2010). Depression-related difficulties are found in multiple tasks tapping into Cognitive Control (De Lissnyder et al., 2012; Joormann & Gotlib, 2010; Levens & Gotlib, 2010). This association might be partly due to the impact of Cognitive Control deficits on emotion regulation strategies, such as RNT (Demeyer, De Lissnyder, Koster, & De Raedt, 2012). Importantly, impaired Cognitive Control not only sets the stage for RNT (Koster, De Lissnyder, Derakshan, & De Raedt, 2011), it is also assumed to hamper the ability to successfully use alternative strategies, like reappraisal (Joormann & Vanderlind, 2014). As a consequence, training an individual's Cognitive Control, using multiple sessions of tasks relying on executive functions, has potential as a therapeutic technique (e.g., Siegle, Ghinassi, & Thase, 2007; Koster, Hoorelbeke, Onraedt, Owens, & Derakshan, 2017). My PhD project aims to further investigate the potential of Cognitive Control Training in reducing RNT (and depressive symptoms), at various levels: as primary prevention (for people going through a highly stressful period), as a supplementary strategy (on top of more established treatments) and as tertiary prevention (for people with a history of depression). I will present these different research designs.

P22 - LINKS BETWEEN DISTURBANCES OF SEMANTIC MEMORY AND RACING THOUGHTS IN BIPOLAR DISORDERS

Mélanie Labalestra[1,2], Nicolas Stefaniak[2], Laurent Lefebvre[1], Chrystel Besche-Richard[2]

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Language abnormalities are present in bipolar disorders (BD) during manic state (Andreasen & Grove, 1986). These symptoms could reflect dysfunction of racing thoughts and are probably the consequence of process disturbances in semantic memory, including inhibition (Weiner, 2017) and automatic spreading activation (Ryu et al., 2012). These semantic alterations have often been assessed by verbal fluences. However, these tasks do not allow to make the distinction between processes that could be related to racing thoughts in BD. The objective of this research is to propose more precise measurements of these processes in semantic memory using procedures based on semantic priming. We recruited 10 patients during euthymic state and 10 matched controls (age, socio-educational level and verbal intelligence). Participants responded to the Racing and Crowded Thoughts Questionnaire (Weiner, 2017). Semantic inhibition was assessed by a semantic priming paradigm during which a semantic ambiguity is induced by using homonymous words. Automatic spreading activation was assessed using a mediated priming paradigm. Our preliminary results are interpreted in the light of semantic memory models and we will develop the clinical implications of this study.

P24 “CAN’T GET THIS GOAL OFF MY HEAD”: DIFFERENTIAL IMPACT OF CONTEXTUAL CHANGES ON ATTENTION (IN)FLEXIBILITY IN DYSPHORIA

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Psychological flexibility, including the ability to flexibly process emotional information, underlies resilient adaptation to changing situations. Consequently, affective flexibility, i.e. flexible attention to emotional information, has been linked to greater resilience, lower levels of rumination and higher reappraisal ability. However, the impact of contextual changes on affective flexibility have not been examined so far, although this may provide a crucial insight into how attention operates when changing situations require allocation of different emotional goals and emotion regulation strategies. In the current study, we examined attention switching between contextually-activated positive and negative emotional goals. Twenty-six dysphoric and 27 non-dysphoric individuals performed an eye-tracking based reaction time task. Each task trial began with the presentation of a context cue along with a goal cue, which would require participants to activate the correct goal emotion (negative or positive). The participants would then press a button to initiate the presentation of 8 emotional faces (4 negative and 4 positive facial expressions). Based on the emotional goal activated previously by the context, participants would then direct their eye-gaze to the goal-relevant facial expression. In line with previous affective flexibility literature, we found that dysphorics, compared to non-dysphorics, displayed a greater ease in switching to negative goals, but difficulty in switching to positive goals, when the context remained constant. However, when the context changed, dysphoric individuals, as opposed to non-dysphorics, showed a faster switch to a negative goal, while struggling to make the switch to a positive goal. Contrastingly, non-dysphorics, compared to dysphorics, were

adept at switching towards positive goals when context shifted, but did not show a similar efficiency in switching towards negative goals when context changed. These results suggest an activation of self-schemas, congruent with the world-view of dysphorics and non-dysphorics, when contexts change and the situations become complex. These findings provide preliminary evidence for the role of contextual (in)flexibility in explaining dysphoria.

P26 - WHEN DOES PERCEIVED PRESSURE NOT TO EXPERINECE NEGATIVE EMOTIONS MAKE US DEPRESSED?

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When individuals feel pressure from society not to experience negative emotions like depression or anxiety, ironically, they experience higher levels of depressive symptoms. In this study, we sought to replicate this finding in a number of diverse cultures (Australia, Poland, South-Korea), and examine possible factors that can help to account for it. In line with previous research, we found that the pressure not to experience negative emotions was associated with depression in all three studied countries. In addition, findings revealed that reappraisal and help-seeking behaviour moderated the association between perceived pressure not to experience negative emotions and depressive symptoms; Individuals with high levels of reappraisal or help-seeking tendency had weaker association between perceived pressure not to experience negative emotions and depressive symptoms compared to those with lower levels of reappraisal or help-seeking tendency. Nevertheless, perceived pressure to experience negative emotions was the strongest predictor of depressive symptoms among other predictors.

P28 - Mapping negative influences of Facebook using network methodology

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Over the years, various studies found a link between Facebook use and depressive symptomatology among adolescents and young adults. However, this relation is not supported in all studies. Investigating the underlying mechanisms and processes that account for this relationship seems crucial in understanding why and under which conditions Facebook use is related to decreased mental well-being. To address this issue, the current research investigates the relationship between Facebook use and depressive, anxiety- and stress-related symptoms, taking into account potential mediating variables such as social comparison, contingent self-esteem, global self-esteem, and rumination. In a first exploratory study, we modelled the unique associations between these constructs using network analysis. Subsequently, we conducted a preregistered confirmatory study. In both studies, social comparison and self-esteem held a central position in the network, connecting Facebook use with indicators of psychopathology. These findings point out the prominent role of social comparison and self-esteem in the context of social networking sites and psychopathological processes. Further in-depth studies, using longitudinal and experimental designs, will be needed to further support these novel findings. Subsequently, evidence-based guidelines should be developed to inform adolescents and young adults on how to prevent negative effects of Facebook use.

P30 - THE POTENTIAL OF BLENDED DEPRESSION TREATMENT. RESEARCH PROTOCOL FOR A TRANSREGIONAL IMPLEMENTATION STUDY

Eva Van Assche[1], Lore Van den Broeck[3], Bert Bonroy[2], Karolien Baldewijns[2], Kimberly Desie[3] & Tom Van Daele[1]

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One of the most prevalent mental disorders, with significant social and economic consequences, is depression. Limiting its ever-growing impact is considered one of the biggest challenges in mental healthcare. Innovative and high-quality e-mental health applications have the potential to provide a substantial contribution to conventional treatment. Although there is strong evidence for the efficacy and effectiveness of such tools, we see a much faster adaptation in other sectors. As implementation of e-mental health is influenced by many factors, it is important to gain additional insight in which of these factors might impede or facilitate the implementation process. Within the Interreg NWE eMEN project, we aim to set up a Belgian implementation study in 2018-2019, making use of a validated e-mental health application, Moodbuster. The tool will be targeted to a wide range of healthcare professionals and their clients in psychiatric hospitals and psychiatric departments of general hospitals, in Wallonia, Flanders and Brussels-Capital Region. Therefore, Moodbuster will be used as an addition to clients' (ongoing) depression treatment. We will primarily focus on the process and success of implementation. Additionally, questionnaires on non-response/refusal and focus group interviews will be conducted with both professionals and clients, to obtain a deeper understanding of their grounds for refusal or agreement to participate. This poster presentation outlines the study's research protocol and discusses how this large-scale study will help to gain insight in which factors promote or hinder large-scale implementation and what are possible regional differences in adoption of e-mental health.

P32 - INNOVATIVE ATTENTION TRAINING TO ACHIEVE STABLE REMISSION IN DEPRESSION: A RANDOMIZED CONTROLLED TRIAL STUDY

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According to different theories and empirical research, attentional control for external information and cognitive control for internal information play a causal role in cognitive emotion regulation ability, a critically important factor in determining resilience. Moreover, reactive attentional and cognitive control (i.e., when actually being confronted with a challenging task or stressor) seem to be influenced by perceived control or expectancy regarding the ability to cope with future stressors (i.e., in anticipation of a challenging task or stressor) (Vanderhasselt et al., 2014). Based on these findings, it could be assumed that the effects of attentional control training - targeting actual controlled emotion regulation processes - may be improved by adding techniques that influence perceived control of emotion regulation ability (e.g., psychoeducation).
In the current study, we aim to investigate whether a mouse-gaze based variant of the eye-gaze contingent attention training (Sanchez et al. 2016, 2017) can improve depressive symptoms and cognitive emotion regulation ability in a remitted depressed (RMD) sample. Additionally, we aim to explore whether prior psychoeducation may increase this effect. In each condition, a computer training, consisting of 10 sessions of about 12 minutes each, will be administered to RMD participants. The experimental condition will receive a mouse-gaze contingent attention training (MCAT), comprising a positively directed interpretation task (instruction to unscramble always positive self-statements) as a modification phase (MCAT-only condition). However, the active placebo condition will only receive an undirected interpretation task without mouse-gaze contingent feedback (MCAT-sham condition). Furthermore, an additional

condition will combine the experimental training with a prior, new psychoeducation session (MCAT-combo condition). Before (pre-test) and after the intervention (post-test), selective attention bias and emotion regulation will be measured. Also, depressive symptomatology and related variables will be assessed at pre- and post-test, as well as at follow-up, 3 and 6 months after the training.

P34 - RELATIONSHIP BETWEEN HIPPOCAMPAL VOLUME CHANGE AND COGNITIVE CHANGE FOLLOWING ELECTROCONVULSIVE THERAPY IN LATE-LIFE DEPRESSION

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Background: Electroconvulsive Therapy (ECT)-induced hippocampal volume change (HVC) is extensively described in recent years. Its relation, however, with the antidepressant effect of ECT remains elusive. The similar time course of HVC and ECT-related cognitive effects suggests a relation, that is, to date, unstudied.
Objective: To investigate the relation between HVC (during ECT) and cognitive changes (from pretreatment to six months after the end of ECT).
Methods: Hippocampal volumes (HV) were measured via automated and manual segmentation of high-resolution 3D T1-weighted images in 88 patients with depressive disorder, within 1 week before and after ECT. Using an extensive neurocognitive test battery, cognitive function was assessed prior to and six months after the termination of ECT. HVC is used to predict evolution in cognitive test scores from before to six months after finishing the ECT-course via Multiple Linear Regression.
Results: Higher right HVC predicts less pronounced progression on the VAT, Letter Fluency Test, and TMT-B. For the 8-Word Test, Category Fluency Test-Animals, and MMSE, the effect is only present in patients that switched from

right unilateral to bitemporal stimulation after 6 ECT sessions. HVC in the left hemisphere was not significantly related to cognitive change.
Conclusion: Our data suggest that a greater change in HV during ECT is associated with a less pronounced improvement of cognition, up to six months after ECT.

P36 - IS SMARTPHONE DEPENDENCE IN TEENAGERS RELATED TO SPECIFIC PERSONALITY TRAITS?

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Aim: With the increasing popularity of smartphones and the omnipresence of internet during the last decade, smartphone dependence has emerged as a growing problem. This is especially the case among teenagers. To improve our understanding of the population at risk and develop appropriate interventions, this study investigates the relationship between smartphone dependence and personality traits in teenagers.

Method: A convenience sample of persons 14 to 18 years old was contacted via the school system and social media. Half of the participants received anonymously a unique link to an internet questionnaire, including the Dutch versions of SAT-II on smartphone dependence and NEO-FFI-3 measuring the Big Five personality traits. The SAT-II is the Dutch version of the Test of Mobile Phone Dependence (TMP) (Choliz, 2012), a validated instrument. The other half of the sample completed the same survey with paper and pencil. Data (N = 95) was analysed with Pearson correlation coefficient and ANOVA.

Results: In bivariate analysis, the level of smartphone dependency was found to be positively related to the levels of neuroticism ($r = .207$, $p = .044$) and extraversion ($r = .250$, $p = .014$), and negatively related to the level of conscientiousness ($r = -.201$, $p = .051$). No significant relationship was found with sex, education, or the personality traits openness and agreeableness.

Conclusion: Our study suggests that persons with high levels of neuroticism and extraversion are at increased risk for smartphone dependency, while a high level of conscientiousness may protect against it.

P38 - UNRAVELLING THE ASSOCIATION BETWEEN INHIBITORY CONTROL AND LOSS OF CONTROL OVER EATING AMONG ADOLESCENTS

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Objective: Loss of control over eating is common among adolescents and is associated with negative developmental outcomes. Recent evidence points to impaired self-regulation and a moderating role of automatic processes as contributing factors to loss of control over eating among adults; however evidence in adolescent samples is limited. Therefore, the aim of the current study was to: (1) investigate whether there is an association between poor inhibitory control and loss of control over eating also among adolescents, and (2) explore whether this relationship is moderated by automatic processing. Method: A community sample of 124 adolescents (10 – 17 years; 65.3% girls; M_{age} = 14 years; SD = 1.90) was divided into a 'Loss of Control Group' (n = 30) and a 'No Loss of Control Group' (n = 94) based on a clinical interview. Inhibitory control and automatic processing (general and food specific) were measured by self-report questionnaires. Results: Adolescents in the Loss of Control Group reported significantly more problems with overall self-regulation compared to the No Loss of Control Group; however, there was no group difference for inhibition specifically. Contrary to dual-process predictions, there was a trend significant interaction between poor inhibitory control and weaker food specific automatic processing in explaining loss of control over eating. Conclusions: Evidence was found for problems with overall self-regulation in adolescents with loss of control over eating. Concerning the specific role of inhibitory control, future studies should replicate whether automatic processing is indeed a crucial moderator.

P40 - WHAT ARE THE LONG-TERM EFFECTS ON THE BEHAVIOUR OF SMOKING CUSTOMERS WHO BUY THEIR FIRST ELECTRONIC CIGARETTE IN A VAPE SHOP?

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Background: In 2017, around 2% of the EU population used electronic cigarettes (e-cigarettes), of whom almost all (ex-)smokers. Most users (also called vapers) bought their e-cigarettes in specialized stores. The prevalence of such vape shops, and the uptake of vaping by smokers, is rising.

Methods: We conducted a six-month longitudinal study assessing smoking and vaping behaviour of smokers buying their first e-cigarette (first-time e-cigarette users) in a brick-and-mortar vape shop. Questionnaires and eCO (exhaled carbon monoxide) measurements were collected at intake, after three and after six months.

Results: Participants (n = 71) were on average 35 years old, most of them were male (62%) and worked full-time (73%). They started smoking at the age of 15 and 82% tried to quit smoking in the past, mainly on willpower. At intake, participants smoked on average 17 cigarettes per day. The main reason for purchasing an e-cigarette was to quit or reduce smoking. Participants purchased state-of-the-art e-cigarettes and sweet (65%) or tobacco (46%) flavoured liquid with a nicotine level of 7mg/mL. eCO levels significantly decreased from 21 ppm to 14 ppm after three months and remained stable to the end of the study. After six months, 18% of participants completely quit smoking, 25% reduced smoking, and 44% failed to quit smoking (13% were lost at follow-up). Little to no negative effects from vaping were reported.

Conclusion: The current study showed that a considerable amount of first-time e-cigarette users are able to reduce or quit smoking autonomously using an e-cigarette.

P42 - The effects of emotion regulation strategies on positive and negative affect in obese children and adolescents

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The last decades, pediatric obesity is a growing problem. Research suggests a possible role of emotion regulation in the vicious circle which maintains obesity. Maladaptive emotion regulation strategies are suggested to play a role in the development of general psychopathology, while adaptive emotion regulation strategies are linked to resilience and well-being. In the problem of obesity, the use of too much maladaptive and too less adaptive emotion regulation strategies may play a role. Because of that, learning adaptive emotion regulation strategies may lead to a better obesity treatment outcome. The present study aimed to evaluate the use of adaptive emotion regulation strategies (Acceptance, Cognitive Reappraisal and Distraction) to cope with a stressor, on the change in positive and negative affect in obese youngsters. Participants were 58 obese youngsters (9 and 15 years) who stayed at a Belgian residential treatment center for obesity. In this experiment, a between subject design was used for the emotion regulation strategies in which group 1 learned Acceptance, group 2 Cognitive Reappraisal and group 3 Distraction. Participants filled in four times a visual analogue scale (VAS): Before the mood induction (T1, baseline), after the mood induction (T2), after applying the emotion regulation strategy (T3) and after a relaxation exercise (T4). The emotion regulation strategy (e.g. acceptance, cognitive reappraisal or distraction) was learned to the participants just after the mood induction. No significant effect of the learned emotion regulation strategies was found. Possible explanations and implications for future research and clinic will be discussed.

P44 - TRAUMATIC EXPERIENCES AND INTEROCEPTIVE AWARENESS: COMPARING MEDICALLY UNEXPLAINED PAIN AND FATIGUE TO PANIC DISORDER AND EMOTIONAL EXHAUSTION

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Background. The present study explores differences between patient groups – that share physical complaints as common characteristic –in the recognition of distress in the body and how this relates to personality characteristics and early childhood adversity.
Methods. 26 patients with fibromyalgia/chronic fatigue syndrome (MUS), 31 patients with panic disorder (PD), and 36 patients with emotional exhaustion (EE) completed a self-observation tool every hour for 7 days assessing how much psychological stress and physical complaints they experienced. Furthermore, all patients completed questionnaires assessing traumatic experiences, interoceptive awareness and trait anxiety.
Results. The within-subject correlation between psychological distress and physical complaints was higher in the PD group than in both other groups. Trait anxiety and anxiety sensitivity, which was higher in the PD group, were positively correlated with being able to see the link between emotional distress and physical complaints. Furthermore, the number of traumatic experiences was higher in the MUS group than in other groups, and was in turn significantly negatively correlated with recognizing distress in the body.
Conclusions. Differences between patient groups arise in trait anxiety and anxiety sensitivity as well as traumatic experiences. Patients experiencing medically unexplained pain and/or fatigue are less anxious and often have

experienced more early childhood adversity, which in turn relates to a worse recognition of distress in the body than in patients with emotional exhaustion and panic patients. These findings may have implications for clinical practice, as it suggests differences in underlying mechanisms in different patient groups, who in turn may benefit from different, tailored treatment strategies.

P46 - PILOT STUDY: DIFFERENCES IN INHIBITORY PROCESSES BETWEEN PATIENTS WITH ANOREXIA NERVOSA AND HEALTHY CONTROLS

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Introduction. Previous research has shown that individuals who suffer from anorexia nervosa (AN) show impaired inhibitory control, which might serve as a risk factor for developing and maintaining this eating disorder. In order to obtain more knowledge on this complex mental disorder, we will make use of an experimental paradigm to detect possible differences in rewarded response inhibition between AN patients and healthy controls. Based on previous studies, higher proactive inhibitory control (Bartholdy et al., 2017) and a smaller reward effect are expected in AN patients on the go no go task, especially with food related stimuli (Steinglass et al., 2012).

Methods. 25 restrictive AN patients and 25 healthy controls will be invited to participate in this pilot study. Participants will perform on a go no go task with monetary reward, which will make use of food and non-food stimuli.

Results. Since data collection is still ongoing, only preliminary results are available (n=20). A repeated-measures ANOVA with two between-subjects and two within-subjects factors was carried out. A significant main effect of trial type (go versus no go trial; $p=0.02$) and a significant interaction effect was found between trial type and reward type ($p<0.001$).

Conclusion. Participants made more commission (compared to omission) errors, and they were also more accurate on go trials when reward was included. So far, no differences were found between patients and controls in terms of accuracy, and stimulus type (food versus non-food) did also not influence the level of accuracy.

P48 - Vivid memories from hell: A systematic analysis of distressing near-death experiences accounts

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Background: Near-death experiences (NDEs) are associated to positive affects, however, a small proportion is depicted as distressing. Only a few studies have addressed these frightening events, and yet they could trigger long-lasting emotional trauma. Objectives: We aimed at 1) looking into the proportion of distressing NDEs in a sample of NDE narratives; 2) running a categorization of distressing narratives based on Greyson and Bush's classification: "inverse", "void" or "hellish" NDEs; and 3) comparing the content of distressing NDEs with "classical" NDEs (which include typical features and are not considered as negative). Methods: NDE experiencers were invited to write down their experience and complete the Memory Characteristics Questionnaire (to assess its phenomenological characteristics) as well as the Greyson NDE scale (to characterize the content of the NDE). Distressing narratives were identified and a text analysis was conducted to classify each narrative into one of the negative subcategories. Content and intensity of distressing and classical NDEs memories were then compared using Mann Whitney U tests based on answers to questionnaires. Results: First, we found that distressing NDEs represent 18% of our sample. Second, the text analysis confirmed Greyson and Bush's classification and highlighted that our subsample includes 14 inverse (56%), 8 hellish (32%) and 3 void (12%) accounts. Finally, memories of distressing NDEs are considered as detailed as memories of classical NDEs. Apart from positive affects, distressing NDEs contain as much typical features as classical NDEs. Still poorly studied, distressing NDEs deserve careful consideration to ensure their integration into NDE experiencers' identity.

P50 - RECOVERING FROM STRESS: THE EFFECT OF ITBS OVER THE LEFT DLPFC ON CORTISOL FOLLOWING A SOCIAL STRESS INDUCTION DEPENDS ON TRAIT RUMINATION TENDENCY

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When we are confronted with unpleasant situations, a series of psychophysiological-responses is activated to help us cope with the circumstances. The hypothalamic-pituitary-adrenal (HPA) axis plays a crucial role in stress-responses, stimulating the release of cortisol in reaction to the perception of stressors. Although a dynamic cortisol-response, with fast rise and decline, can be adaptive to cope with acute stress, excessive activation of the HPA-axis can have adverse effects on health. Mental rehearsal of stressful events through rumination may extend the stress-response and lead to slower recovery. Previous studies in healthy-volunteers and neuropsychiatric-patients, have reported a possible impact of non-invasive brain stimulation over the dorsolateral prefrontal cortex (DLPFC) on the HPA-axis and cortisol secretion. Therefore, we wanted to examine whether iTBS could affect the HPA-axis functioning after being confronted with a stressor, when taking into account individual baseline tendency to ruminate. Two sham-controlled iTBS sessions over the left-DLPFC were administered to thirty-eight healthy-volunteers who were subject to a social stressor while cortisol was measured. Here we found that participants who reported a higher tendency to ruminate, showed a better average cortisol-recovery when given real stimulation compared to sham. Participants who reported a low tendency to ruminate, appeared to have an opposite reaction, showing a worse average cortisol-recovery after real stimulation compared to sham. This suggests that the effect of iTBS depend on baseline characteristics of people, which are known to be associated with specific neural activation patterns. These results emphasize the need for individualized stimulation protocols based on individual specific characteristics.

P52 - SEXUAL ABUSE AS A WAY TO COPE WITH STRESS AND A QUEST FOR WELL-BEING?

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Sexual offending and sex offenders have often been analyzed in terms of the risk of re-offending. This research proposes an understanding of the sexual offense through the search for well-being. Is the commission of sexual violence part of a particular process of seeking well-being?

This mixed study evaluates the concepts of happiness and well-being in a population of men (N = 30) aged 19 to 66 and sentenced for sexual offenses. Each subject had been in therapeutic follow-up for at least one year in specialized mental health centers for sexual offenders. A semi-structured interview approached perception of the act, emotional situation and definition of happiness. In addition, five questionnaires – Quality of life Profile (Gérin, 1991), Self-Efficacy Scale (Jérusalem & Schwarzez, 1992), Perceived Stress Scale (Cohen, 1983), Oxford Happiness Questionnaire (Argyle, 1989) and Beck Depression Index (1983) – supplemented this material.

The cross outcome of a thematic analysis and statistical results highlight significantly higher perceived stress scores in parallel of lower relational quality of life assessment at the time of the acting out. Mostly, the perpetrators of sexual assault we met consider the period of the sexual abuse as a difficult and unsatisfactory situation at the family and relationship levels. Without a "loophole", the sexual offense appears as a way to cope, to reduce negative emotions, to increase positive emotions and the satisfaction they have about their life and perhaps, to achieve a state of well-being or happiness.

P54 - NEURAL CORRELATES OF COGNITIVE CONTROL FUNCTIONING IN INDIVIDUALS WITH INSOMNIA DISORDER

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Individuals with insomnia disorder (ID) commonly report associated complaints of cognitive functioning. Conversely, both behavioral and neurological evidence supporting this notion of cognitive impairments in ID remain remarkably scarce and inconclusive. To investigate this, the current study used EEG to temporally dissociate the dynamic interplay of proactive (i.e., maintenance and updating of task-relevant information) and reactive control (i.e., interference monitoring and resolution). Using the AX-Continuous Performance Task (AX-CPT), participants responded with a target response to a probe-stimulus when it was preceded by a specific cue. The results indicate that compared with good sleeper controls (GSC), ID show an impaired proactive recruitment of cognitive control (reflected by the P3b and the contingent negative variation components of the ERP). These findings provide reliable evidence for neurological impairments in cognitive control functioning in ID and contribute to a better understanding of the discrepancy between the commonly reported cognitive impairments in ID and the scarce objective evidence for these cognitive complaints.

Developmental processes and disorders

14u10-15u00

P56 - BILINGUAL EDUCATION (CLIL) AND ATTENTIONAL CONTROL: A LONGITUDINAL STUDY FROM KINDERGARTEN TO SECOND GRADE

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A number of studies suggest that mastering a second language has a positive impact on cognition and in particular on attentional control (Bialystok et al., 2004; Prior & MacWhinney, 2010; Bialystok et al., 2008; Costa et al., 2008). These advantages have also been reported for children attending linguistic immersion classes (Nicolay & Poncelet, 2013; 2015; Barbu et al., submitted; Puric et al., 2017). However, other studies did not observe positive effects of bilingualism on cognition (Gathercole et al., 2014; Ross & Melinger, 2016; Karlsson et al., 2015; Kaushanskaya, Gross, & Buac, 2014; Woumans et al., 2016; Simonis et al., submitted). The aim of this study was to re-examine the links between bilingualism and cognition by using a longitudinal study design, a type of design rarely used in previous studies. We followed longitudinally forty-nine children learning a second language (Dutch) via a language immersion school curriculum. The children were matched on age, sociocultural level, vocabulary level, nonverbal intelligence and academic performance to fifty children following a regular school curriculum. The critical measures assessed different aspects of attentional control (alertness, auditory attention, divided attention, cognitive

flexibility). The children's performance was assessed each year from second year kindergarten to second grade. Over the different assessments, we observed no robust advantage for any aspect of attentional control in the immersive versus control group. Results are discussed in terms of L2 characteristics, L2 mastery and exposure, motivation, and the nature of attentional control.

P58 - SCREENING EARLY FOR MATH LEARNING DIFFICULTIES WITH A NONVERBAL CROSS-MODAL ADDITION TASK

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Although numerical skills are essential in modern societies, 5- 7 % of the population suffer from mathematical learning disabilities. Due to the hierarchical nature of mathematical knowledge, screening during the earliest stages of learning is essential to intervene efficiently. While different screening tools exist, they rely on verbal instructions and task content, hampering their usefulness in linguistically heterogeneous young school populations. We developed a computerized task that requires subjects to encode both auditory and visual numerical information to successfully respond to the task's demands. For task instruction, participants were presented a video showing a person correctly solving three easy items of the task, before moving on to a practice session of three different items. If any item was solved incorrectly, the entire practice session was repeated for the participant. We administered the task to a sample of first grade students and collected participant's performance in standardized addition, subtraction and number comparison (1 & 2-digit) tasks. A multivariate analysis with practice repetition as between-subject factor on the four standardized control measures revealed that participants that repeated the practice session scored significantly lower in three out of four dependent measures. These results suggest that the immediate understanding (i.e. practice items solved correctly on the first try) of our task, requiring deductive reasoning and an abstract, format-independent representation of quantity, is able to differentiate between high and low performers on standardized measures of basic math competence nonverbally at an early stage of learning. Implications and limitations will be discussed.

P60 - DISCRIMINATION AND CATEGORIZATION IN AUTISM SPECTRUM DISORDERS: PROJECT OUTLINE AND PRELIMINARY RESULTS

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Categorization is essential to function efficiently in daily life. The ability to group things according to a common characteristic is one of the ways people organize their world. Individuals with autism spectrum disorders (ASD) are suggested to experience difficulties with categorizing, which might cause or aggravate their characteristic problems in social interactions. This difficulty with categorization fits with previous perceptual theories of ASD emphasizing the enhanced ability to perceive differences (i.e. discriminate) and the reduced ability to generalize. However, research investigating these perceptual processes in ASD is limited and highly contradictory. The present project will investigate these fundamental processes of discrimination and categorization concurrently in ASD, using controlled stimulus sets and solid behavioral paradigms combined with EEG measurements. Specifically, task 1 will investigate categorization and discrimination in neurotypical (NT) vs. ASD participants with visual stimuli that are naturally perceived categorically, while task 2 will investigate potential shifts in discrimination performance before and after categorization training in NT vs. ASD participants with artificial stimuli. Additionally, we plan to use a combination of behavioral psychophysical and Fast Periodic Visual Stimulation (FPVS) EEG measures to target both explicit and implicit categorization and discrimination, and to relate them to each other. The poster will explain the project in more detail and provide some preliminary results.

P62 - NEURAL RESPONSE TO HEARING THE OWN NAME IN CHILDREN WITH AND WITHOUT ASD

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One's own name is a very salient stimulus involved in a lot of processes, e.g. attention, social interaction, social identity, self-concept and self-other distinction. Diminished responding to hearing the own name in infancy is one of the earliest and strongest predictors of later diagnosis of autism spectrum disorder (ASD). Surprisingly, there is only one study so far that investigated the neural correlates of hearing the own name in ASD (Nijhof et al., 2018). This event-related potential (ERP) study showed an enhancement of a parietal positivity for the own name (compared to the name of a close other and an unknown name) in neurotypical adults. This effect was found to be completely absent in adults with ASD. The lack of preference for the own name could be linked to decreased activation in the right temporo-parietal junction (rTPJ), a brain region that plays a key role in self-other distinction and mentalizing, and has been strongly implicated in ASD research. The current study intended to investigate, for the first time, the neural responses to hearing the own name (vs. other names) in children with a diagnosis of ASD, relative to typically developing children. Preliminary analyses show very similar patterns as seen in adults. Children with ASD differ from their typically developing peers, in that they do not show an enhancement of parietal positive activity when hearing the own name. Further research is warranted to evaluate the ERP response to the own name as a putative neurocognitive biomarker of ASD across the lifespan.

P64 - Behavioral and neural underpinnings of prior integration with sensory information in autism

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Perceptual decisions rely on sensory information but also on prior expectations. Recent Bayesian theories have suggested that an atypical integration of priors with sensory information could be at core in Autism Spectrum Disorders (ASD). The present study aimed at investigating the behavioral and neural correlates of prior integration in ASD. For this purpose, we used a vibrotactile frequency discrimination task that was designed to elicit a time-order effect (TOE). The TOE operates as if an implicit prior (i.e. mean frequency of previously delivered stimuli) would bias the participant decision (i.e. would increase or decrease the level of difficulty perceived). Using behavioral tasks based on the TOE and computational modeling, we found that both neurotypical (NT) and ASD adults had implicitly learnt a prior. Yet, compared to NT, ASD participants were less flexible in adjusting their priors. Using functional MRI, we characterized the neural correlates of prior integration in NT and ASD. In both groups, increased discrepancy between the stimulus and the prior was associated with increased neural activity in the somatosensory cortices, inferior parietal regions and prefrontal regions. This modulation was weaker in the inferior and orbital frontal gyri in ASD than in NT. Increased difficulty (under prior influence) was associated with increased activity in the anterior cingulate cortex in NT, and in inferior parietal and prefrontal regions in ASD. Those behavioral and neuroimaging

results suggest that ASD can indeed be characterized by an atypical learning of priors. They call for further neuropsychological explorations about core perceptual dysfunctions in ASD.

P66 - Neural correlates of hearing one's own name: A potential early marker for Autism Spectrum Disorder?

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The own name is a salient stimulus, often used by others to initiate and engage in social interaction. Typically developing infants start to orient towards the sound of their own name already at 4-5 months of age. Lack of orientation to the own name is considered as one of the earliest signs of autism spectrum disorder (ASD). Enhanced attention to the own name is important for language acquisition and the development of socio-cognitive skills. Consequently, a reduction of attention to this social cue may result in weakened early social information processing, interfering with the development of social and language skills. We aimed to identify the neural patterns of two infant groups at low-risk(LR) and high-risk(HR) for developing ASD, at 10(n=60) and 14(n=68) months of age, while they were hearing their own name versus a stranger's name, each followed by object presentations, representing attention allocation based on this social cue. The preliminary results of auditory ERPs suggest that LR infants discriminated and paid more attention to their own name compared to stranger name by the age of 10 months; yet the differences between the groups were identified more clearly by the age of 14 months. These results imply that HR infants become differentiated from LR infants by their brain development around one year of age with respect to paying attention to their own names. At the conference the results of both auditory and visual ERPs will be presented and discussed in the context of the own name as a social cue.

P68 - NEUTRAL CUES PREVIOUSLY PAIRED WITH CARTOON CLIPS TRIGGER CARTOON-SEEKING BEHAVIOUR IN CHILDREN

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In Pavlovian-to-Instrumental Tranfer (PIT), Pavlovian cues that have been paired with an appetitive outcome will increase the response rate of instrumental responses that have been trained using the same or a similar outcome as reinforcer. PIT has been widely demonstrated in animals and adult humans, using a variety of preparations, and is regarded as a laboratory model of cue-elicited appetitive behavior that may be involved in obesity and various forms of addiction. So far, PIT has not been demonstrated in primary school children, and its potential role in the control of various forms of (over-)consumption behavior in children has not been explored. Here, we demonstrate that a neutral cue that has been paired with the presentation of cartoon clips selectively increases the rate of emitting a touch-screen response that previously triggered the presentation of similar cartoon fragments. This result suggests that initially neutral environmental cues may come to exert a strong influence on children's media consumption. More generally, environmental cues may come to control various forms of appetitive behavior in children, which may have implications for phenomena as diverse as gaming, smartphone and internet use, and unhealthy eating and obesity.

Cognitive processes

14u10-15u00

P70 - Can we count on order when performing arithmetic and when performing mathematics?

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The ability to process ordered sequences (i.e. ordinality) has been shown to be highly related to adults' arithmetic skills. However, two questions regarding ordinality remain unanswered. Firstly, it is still under debate which cognitive mechanisms underlie ordinality. Secondly, despite the well-established relationship between ordinality and arithmetic, it is unclear whether ordinality is also related to other mathematical skills. The current study aimed at addressing these questions by inferring the underlying processes of ordinality from behavioral effects. Additionally, it was investigated which aspect of ordered sequences was most predictive for ordinality performance. Furthermore, the current study examined whether performance on ordinality is related to arithmetic and mathematical reasoning. An ordinality task was administered in which participants had to indicate whether a sequence was presented in an order or not. Furthermore, an arithmetic test and mathematical reasoning task were administered. Both order (e.g. order and non-order) and distance (e.g. small, medium and large distance) were manipulated. Within the ordered sequences, direction (i.e. ascending and descending) and regularity (i.e. regular sequences like 345 and irregular sequences like 346) were manipulated. Results

demonstrated - in contrast, with previous research - standard distance effects for all ordered and non-ordered sequences, probably due the presentation of sequences with less strong associations which trigger digit comparison strategies (e.g. comparing the magnitude of digits with each other). All manipulations were significant predictors of the reaction time on the ordinality task. Finally, ordinality was related to arithmetic ability but not to mathematical reasoning.

P72 - Interference and problem size effect in multiplication fact solving: Individual differences in brain activations and arithmetic performance

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A large variability of performance in simple multiplication is observed and has not found a compelling explanation yet. One robust effect in simple multiplication is the problem size effect (better performance for small problems compared to large ones). Recently, studies brought to light another effect, the interference effect, indicating that high interfering problems (receiving more proactive interference from previously learned problems) are more difficult to retrieve than low interfering problems. The behavioral sensitivity-to-the interference effect is shown to explain individual differences in multiplication, in children and adults. This study aimed at investigating the individual differences in multiplication in relation to the neural interference effect and the neural problem size effect. In a multiplication verification task, we orthogonally contrasted the level of interference and of problem size. Forty-two healthy adults, who showed high variability in an arithmetic fluency test, undertook the task during fMRI acquisition. The general reasoning level (IQ) was taken into account in the analyses. Our findings revealed a neural interference effect linked to individual differences in multiplication in the left inferior frontal gyrus, indicating a higher interference effect for low performers compared to high performers. This region is suggested to be involved in resolution of proactive interference. No correlation between the neural problem size effect and multiplication performance was found. This study supports the idea that the interference due to similarities/overlap of physical traits (the digits) is crucial in memorizing multiplications and in determining individual differences in arithmetic.

P74 - AUDIOVISUAL COMPARISON OF LARGE NUMBERS IN ADULTS SHOWS FURTHER EVIDENCE FOR THE DISSOCIATION BETWEEN SYMBOLIC AND NON-SYMBOLIC NUMBER REPRESENTATIONS

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In numerical cognition the relation between symbolic (e.g., Arabic numerals) and non-symbolic (e.g., dot arrays) numbers is hotly debated. Traditionally, it has been assumed that both symbolic and non-symbolic numbers are processed in common numerical system, referred to as the Approximate Number System (ANS). Typical behavioral signature of the ANS is the presence of ratio effect in both symbolic and non-symbolic numerical tasks - the smaller the ratio between two numbers is, the harder it is to distinguish them. Recently, using audiovisual paradigm, we argued for the existence of two distinct numerical systems – one for exact symbolic numbers and another for approximate quantities. However, this study used small symbolic numbers, which are frequently acquired and are thus represented more precisely than the corresponding non-symbolic numbers, possibly explaining the distinct behavioral performance for symbolic and non-symbolic numbers. To investigate the relation between symbolic and non-symbolic numbers further, we presented adults with four audiovisual conditions where they compared pairs of large symbolic and non-symbolic numbers (10 to 40): (1) spoken number word with digits, (2) auditory presented tones with dots, (3) number word with dots, (4) tones with digits. Accuracy results showed ratio effect in all three conditions containing non–symbolic numbers: for the most difficult ratios, the performance was at chance, and increased as the ratios became easier. In contrast, performance was at ceiling for both easy and difficult ratios, when participants compared number word with digits. The present data is not in line with the ANS approach and provide further evidence for separate systems.

P76 - THE ORDER OF TENS AND UNITS ON BILINGUAL AND MONOLINGUAL TWO-DIGIT NUMBER TRANSCODING

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The German number word system inverts units and tens compared to the symbolic Arabic notation. At the opposite, the French number words are more transparent with respect to the Arabic number code. The linguistic structure of number words can facilitate or impede numerical development and performances in number transcoding tasks. Here, we investigate the influence of inverted (i.e. German) and non-inverted (i.e. French) number-words in transcoding task in a group of monolingual and a group of bilingual adults. We used an original transcoding paradigm in both monolingual and bilingual university students who listened to two-digit numbers and had to identify the heard number amongst four visually presented Arabic numbers. Our paradigm manipulated the order of appearance of the units and tens of two-digit numbers on the screen to mimic the German vs. the French number word systems. More precisely, Units-first appearance for German, Tens-first appearance for French, and finally Simultaneous appearance similarly as in a classical transcoding task. Monolinguals were significantly faster than bilinguals (in their respective language) during the Simultaneous condition. In contrast, bilinguals did not systematically differ from monolinguals during the decomposed conditions. This suggests that similar strategies (e.g. decomposition) are used by bilinguals and monolinguals when processing sequentially presented two-digit numbers. We conclude that speaking two languages has a cost even in a simple cognitive task such as transcoding. In other words, bilingual minds do not simply correspond to the sum of two monolingual minds. Taken together, the results provide new insights on how language structure qualitatively influences basic numerical processing, even in adulthood.

P78 - THE EFFECT OF MENTAL MODEL SIZE IN SIMPLE SPATIAL ORDER REASONING

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Most research on relational order reasoning has focused on solving problems involving memorization. Also, the amount of mental models that reasoners build has been discussed a lot more than the size of these models. We have investigated the effect of mental model size in spatial reasoning problems without memorization. Our hypothesis was that problems involving more items would be harder to solve than problems with less items. We measured the accuracy of responses to spatial reasoning problems of which the premises contained 5, 7 or 9 items. The premises remained available to reasoners when they answered the questions. Problem size was manipulated by varying, respectively, the number of irrelevant premises (experiment 1) and the spatial interval of the questioned items (experiment 2). For both experiments, 43 adults were tested in a within-subject design for the three problem size conditions.

The results of the accuracy measurements do not support our hypothesis. Without memorization task, it seems that the performance ceiling was reached. Response times, however, do strongly support the hypothesis that larger problems are more difficult. We conclude that spatial reasoning with information from memory differs substantially from reasoning with available information when it comes to mental model building strategies. For investigating spatial reasoning in itself, without strong memorization effects, we suggest more complex reasoning tasks. This project was accepted to the pre-registration challenge of the Center for Open Science.
(https://osf.io/26hjs/?view_only=b31b2c68684540929480b093eccfbb08)

P80 - OBJECT FUNCTION AND MANIPULATION KNOWLEDGE: PRESENTATION OF AN EVENT-RELATED POTENTIALS STUDY

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Semantic knowledge includes knowledge about general culture, language but also about objects. Critical knowledge about objects includes “object function” (i.e. the final goal of an object; e.g. the function of a piano is to play music) and “object manipulation” (i.e. the appropriate specific gestures allowing the correct use of an object; e.g. typing with the fingers). Previous studies have already shown dissociation between Function and Manipulation knowledge in left brain damage patients. The present study aims to investigate the electrophysiological activity in the processing of function and manipulation knowledge. To this aim, in an event-related potential study (ERP), twenty right-handed healthy young adults will be included to perform a lexical decision task (i.e. decide if a word is a real word or a pseudo-word) associated to a semantic priming paradigm. Each target will be associated with three types of prime: one sharing the same function (e.g. piano-violin); another the same gesture of use (e.g. piano-keyboard) and finally an unrelated prime will be included (e.g. piano-ladle). The Stimulus Onset Asynchrony was set at 190 ms: the prime will be presented for 90 ms and will be followed by a 100 ms white screen until the presentation of the target. The behavioral responses (priming effects) as well as the electrical activation (event-related potential) will be recorded. At a behavioral level, we expect a facilitation effect (faster reaction time) in function and manipulation knowledge. At an electrophysiological level, event-related-potentials should show that target words related to prime words elicited reduced N400 relative to unrelated target words. The semantic priming paradigm will be presented as well as the preliminary behavioral and electrophysiological results.

P82 - THE TOLERANCE OF ORIENTATION PREFERENCES ACROSS SPATIAL FREQUENCY CHANGES IS NOT BROKEN BY TEMPORAL CONTIGUITY

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The images projected onto the retina can vary widely for a single object. Despite these transformations in size, position, … , primates can quickly and reliably recognize objects. This transformation tolerance could be built (or broken) through temporal contiguity, as shown in monkey inferotemporal cortex (Li & DiCarlo, Science 2008). The primary visual cortex (V1) is typically seen as a robust feature detector for orientations and spatial frequency (SF), however, experience-dependent plasticity has been observed in adult V1. Therefore, we investigated whether temporal contiguity learning could influence orientation selectivity in rat V1. 32-channel extracellular recordings were performed in eight rats. The rats were repeatedly exposed to two sequential gratings with different spatial frequency, including one grating at a reference SF, and the other grating at a different SF and with different (swap SF) or with the same orientation as the other grating (control SF). Pre-exposure we isolated 239 single neurons, and 251 post-exposure. We analyzed whether the single-neuron preference for one orientation at the reference SF is still found at the control and swap SF. Contrary to our hypothesis, no change in selectivity was detected after exposure to the control or swap SF. Only an increase in selectivity for the reference SF was observed, likely due to excessive exposure. Temporal contiguity learning does not appear to affect orientation selectivity in V1. The basic filter mechanisms that characterize V1 processing seem unaffected by temporal contiguity manipulations.

P84 - MEG OR EEG, WHICH ONE TO PRIVILEGE TO UNCOVER SPEECH-BRAIN TRACKING

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During connected speech listening, brain activity tracks speech rhythmicity at delta (~0.5 Hz) and theta (4–8 Hz) frequencies. It has been hypothesized that corresponding neocortical oscillations subserve chunking of speech into relevant units for speech recognition. Here, we compared the potential of magnetoencephalography (MEG) and high-density electroencephalography (EEG 256 electrodes) to uncover speech-brain tracking. In this study, 10 healthy right-handed adults listened to 2 different 5-min audio recordings either without noise, or mixed with a cocktail-party noise of equal loudness. Their brain activity was simultaneously recorded with MEG and EEG. We estimated speech-brain tracking using coherence. In both conditions, significant speech-brain tracking peaked at delta and theta frequencies in the temporal regions with MEG and EEG. However, in the noiseless condition, speech-brain tracking estimated with MEG was substantially higher than that estimated with EEG, by a factor ~3 at delta frequencies and ~2 at theta frequencies. Moreover, two previously reported findings could be replicated based on MEG but not EEG: 1) that brain signals at theta frequencies track significantly more to the attended speech than

to the global sound, and 2) that speech-brain tracking at delta frequencies in the left hemisphere dampens less when noise is added than that in the right hemisphere. The present study demonstrates that MEG is more suited than EEG to uncover significant speech-brain tracking. Quantitatively, EEG sessions need to be ~3 times longer than MEG sessions to achieve similar statistical power. Moreover, MEG is more suited than EEG to pinpoint subtle speech-brain tracking effects.

P86 - ASSESSING THE INFLUENCE OF SPATIAL FREQUENCY INFORMATION ON FACIAL EXPRESSION PROCESSING USING FAST PERIODIC VISUAL STIMULATION SWEEP EEG

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Facial expression processing is vital for the survival of humans as social creatures. The human face conveys a spectrum of spatial frequencies (SF). Low spatial frequencies (LSF) are found in the general contours, whereas high spatial frequencies (HSF) convey specific features. It has been suggested that the fast processing of crucial facial expressions, such as fear, is supported by a subcortical system which predominantly exploits LSF information, but the empirical evidence is mixed. To determine the relative dominance of LSF vs HSF information for detecting fearful faces among neutral faces, we combined fast periodic visual stimulation (FPVS) with scalp electroencephalography (EEG) within a Sweep Visual Evoked Potential (sVEP) oddball paradigm. Neutral faces were presented at 6 Hz, and fearful faces at 1.2 Hz, which allows to determine the implicit neural sensitivity for detecting fearful expressions by quantifying the periodic brain response at the oddball frequency. The sVEP allows us to vary the SF content across a broad range throughout the experiment. Starting from a stimulus containing only LSF or HSF information, SF information is progressively added in seven logarithmic steps towards a stimulus containing the full SF spectrum. Preliminary data in healthy young adults show that adding SF information, irrespective of the nature (LSF vs HSF), almost linearly increases the oddball response. This suggests that fear detection relies on a broad range of SF information, without any preferential use of LSF or HSF information. We will present the implicit EEG data and correlate these with explicit behavioural data.

P88 - ABSENT POPULATION-LEVEL LATERALITY FOR WHITE MATTER ASYMMETRIES IN SPECIFIC LANGUAGE IMPAIRMENT

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The asymmetric organization of the brain is often thought to hold evolutionary and cognitive benefits. Therefore, it has been suggested that individuals with a reversed (i.e. right) hemisphere dominance for language have higher odds to develop communication disorders, including specific language impairment (SLI). Using diffusion tensor-based manual tractography, white matter (WM) asymmetries of 5 language-related tracts were investigated in 22 children with SLI and 22 controls matched for age, gender and handedness. After tract reconstruction, 2 WM properties were determined for each tract: tract volume and fractional anisotropy (a measure of white matter integrity). Next, a laterality index (LI) was computed for each tract in each participant using the formula (left–right hemisphere)/(left+right hemisphere). To analyse the strength of laterality, a MANOVA was performed on the absolute value of each LI. No significant between-group differences in strength of laterality ($p=0.447$) were revealed. To investigate the directionality of lateralization, participants were classified as left-lateralized ($LI>0$) or right-lateralized ($LI<0$) for each measure of each tract. Subsequently, an exact binomial test (H0: proportion left=proportion right lateralized) was run separately for the SLI and control groups. While the control children showed a significant leftward population-level bias for 4 out of the 5 WM tracts ($p<0.05$, Benjamini-Hochberg corrected), no such directional biases were found in the SLI group. We suggest that the lack of a factor which drives language to the left hemisphere, rather than having (structural) right-hemisphere dominance for language per se, is associated with SLI.

P90 - PSYCHOLOGICAL ORGANIZATION: WHAT, WHY, AND HOW?

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The law of Prägnanz states that "[…] psychological organization will always be as "good" as the prevailing conditions allow" (Koffka, 1935, p. 110). We clarify this definition by proposing that Prägnanz is about maximizing the efficiency of process and outcome. Often there is a trade-off between the two: the most useful organization is almost never the one demanding the least resources.

The aim of this project is to clarify and test what "good" and "prevailing conditions" mean in the case of human visual perceptual organization. Here, we want to discuss our own understanding of the law of Prägnanz as well as the possible applications in related fields (i.e., perceptual organization in other modalities as well as cognitive organization, but also insights in the perceptual and cognitive neuroscience domain). This will allow us to detect and elaborate connections between different subfields of psychology in how human individuals organize perceptual and cognitive information and use this organized information.

P92 - THE DIFFERENTIAL IMPACT OF LEVELS OF DERIVATION ON PERSISTENCE IN RULE FOLLOWING

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The importance of the effects of rules on human behaviour have long been identified as important in the psychological literature. The increasing importance of arbitrarily applicable derived relational responding (AADRR) in this regard has also come to be of particular interest within Relational Frame Theory. One feature of AADRR that has been implicated rule following and its persistence in the face of competing contingencies is level of derivation. However no published research to date has systematically explored this suggestion. Across two experiments, the impact of levels of derivation was examined on persistent rule-following at two stages of relational development: mutual entailment (Exp. 1) and combinatorial entailment (Exp. 2). The findings from both experiments were consistent with the suggestion that lower levels of derivation produce more persistent rule-following in the face of reversed reinforcement contingencies. Variations in results across both experiments are discussed in terms of the dynamics of AADRR (i.e. levels of derivation, coherence, complexity, and relational flexibility).

P94 - Does my mind make me loose the control? Investigation of the influence of mind wandering on cognitive control

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Mind wandering is a mental phenomenon that arises when attention is redirected from an external task toward an internally generated content. To understand how this phenomenon emerges and how it works, one possibility is to look how mind wandering is related to other well studied cognitive abilities, and more specifically, to the cognitive control. Various tasks are used in previous literature to examine cognitive control during mind wandering. However, no studies have determined the effect of mind wandering on cognitive control using a subliminal priming task. Accordingly, we employed an arrow priming task to verify what happens to our control abilities when we mind wander. Participants were probed at random times to indicate their state of mind at that moment (on-task or mind-wandering) and the extent of their focus on the task or on something else («intensity of focus»). For the analysis, we used classical inferential statistics and linear mixed models. Results revealed that a congruency effect is present while participants perform the task and this effect differs prior to the participants' statement of being on-task compared to being mind wandering. In concrete, participants answered faster to incongruent trials when they stated to be mind wandering than when being on-task. However, the congruency effect was not found to differ in between the different intensities of focus. While mind wandering the subliminal conflict in incongruent trials may not be perceived by the participants as when being focused on the task.

P96 - Mind Wandering At and Under Capacity: An on-line daily life assessment of mental activity

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In 1966 John Antrobus studied the occurrence of a spontaneous mental phenomenon called stimulus-independent thought (SIT). SITs are thoughts not related to a primary focus. Mind wandering is mental state, or process, by which SITs emerge. Mind wandering is characterized by a spontaneous and unaware shift away from a person's primary focus towards internally generated thoughts. Antrobus theorizes that the human mind is geared towards maximizing the utilization of its cognitive resources with thoughts. He found evidence attributing the emergence of SIT by two dimensions. First, SITs occur when there is an underutilization of cognitive resources. Second, SITs will occur based upon the relative pay-off value of the competing thoughts. Previous experimental studies have shown a negative relationship between mind wandering and working memory capacity. Cohen attempted to systematically control the number of items in working memory and implies a possible relationship between the emergence of mind wandering varying by the number of thoughts currently held in a person's mind. We hypothesize that during mind wandering in daily life, a person's mind holds more than one thought - a primary focus and at usually another thought that the mind provides. We test this theory directly in a daily life experience sampling study using mobile phones. With this method, we assessed naturally occurring incidents of mind wandering for 32 participants five times a day over a two-week period. To further explore the relationship between resource capacity and mental states, we embedded a boundary extension task into each probe. If the mind is relatively full during mind wandering, then we expect larger boundary extension scores. We found that there was 1.06 objects for the focused state, while mind wandering had 1.8 objects on average. There was no significant difference between goal-relevance of the primary task on the number of objects or any of our questionnaire items. The boundary extension tasks show promising direction but limited effect. Altogether, we provide

preliminary evidence for both Antrobus's proposition that the mind works to maximize thoughts and that it makes salient important concerns when the primary thought is not cognitively engaging or relevant. We discuss the possibility that mind wandering may act as a way to steer the executive towards relevant and important thoughts.

P98 - A Relational Frame Theory analysis of perspective-taking using the Implicit Relational Assessment Procedure (IRAP)

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Perspective-taking has been argued to be a key process in the development of the "self". Under a Relational Frame Theory (RFT) framework, researchers have investigated the role of deictic relational responding (perspective-taking) in the analysis of the self in relation to others, time, and place. The current study employed two Implicit Relational Assessment Procedures (IRAPs) to investigate potential differential patterns of responding to self and to others. Across two experiments, a 'self-focused IRAP' required participants to respond to both positive and negative statements about themselves while an 'other-focused IRAP' required participants to respond to similar statements about others. Experiment 1 yielded significant differences between the IRAPs when the 'other' was unspecified, but non-significant differences were recorded across Experiment 2 when the 'other' was specified. The current methodology may provide a useful way of investigating differences in deictic relational responding.

P100 - Self-Other distinction in empathy is modulated by cTBS on right supramarginal gyrus and dispositional cognitive empathy: an rTMS/fMRI study

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Self-Other distinction (SOD) is a crucial mechanism in empathy regulating conflicts and preventing confusions between self-experienced emotions and those of others. The present study aimed to extend our current neurocognitive understanding of this mechanism. Thirty-one participants underwent a continuous theta burst rTMS protocol that transiently neuromodulated the supramarginal gyrus (rSMG), a previously identified sub-region of the temporoparietal junction involved in cognitive empathy (Silani et al., 2013), and the vertex, a control cortical site. Right after rTMS they completed a visuo-tactile empathy task in a MRI scanner. SOD performance was measured by changes in pleasantness judgments and brain activity between conditions where oneself and another person shared congruent emotional experiences and conditions where self-other emotional experiences were incongruent. SOD performance was enhanced following rTMS on the rSMG in comparison to vertex stimulation but this rTMS-induced enhancement of SOD was only observed in relation with lower dispositional cognitive empathy. An identical relationship was found with brain activity where an rTMS-induced reduction of rSMG activity during SOD was only observed in relation with lower dispositional cognitive empathy. Finally, the direction of the correlation between the rTMS-induced change during SOD and dispositional cognitive empathy was associated with two anatomically and

functionally distinct networks. These findings yield new insights about the causal role of the rSMG in SOD in empathy and uncover a novel perspective on how rTMS affects high-level cognition.

P102 - Reward-triggered response biases are emphasized by the temporal coincidence of valence and action information

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The present study focused on whether interactions between incentive valence and action requirements (valence-action biases) are influenced by presenting incentive valence in advance or concurrent with action information. To this end, we employed a cued incentive approach/avoidance task in which incentive valence and action requirements were changing from trial-to-trial. While action requirements (approach/avoid) were signaled by target orientation, incentive valence (win/loss/neutral) was signaled by either the cue or target color in discrete blocks. Dependent on the valence-associated color in a trial, correct and in-time responses led to gains, prevented losses, or no consequences, while incorrect or too-late responses led to missed gains, losses, or no consequences. The results showed expected valence-action biases across blocks, with response facilitation for compatible mappings (win-approach; loss-avoid), and impairments for incompatible mappings (win-avoid; loss-approach). However, these biases were stronger in blocks where valence was signaled by the target itself, possibly reflecting fairly automatic response capture that is beneficial in compatible and detrimental in incompatible trials. Incentive cues, however, may induce more controlled processes that are shared between positive and negative incentive conditions, thereby weakening inherent biases. Delaying trial-by-trial feedback in time (between-subject manipulation) did not change the observed pattern, suggesting that valence-action biases are preserved when participants' responses are not immediately followed by a valence outcome. Together, this study shows that incentive valence-action biases are pronounced when valence information is signaled via target as compared to cue features, which can be considered as rather pro-active and re-active task regimes, respectively.

P104 - TO GENERALIZATION AND BEYOND: AN INTEGRATED APPROACH TO PERCEPTUAL AND EXPERT LEARNING

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Playing video games might enhance cognitive and attentional capacities that go beyond in-game playing skills, whereas perceptual learning (PL) studies often find stimulus-specific learning. Including the characteristics of gaming in PL paradigms might contribute to the specificity of PL debate. We set up a gaming paradigm in which 16 subjects are trained for ten hours on two PL tasks, orientation discrimination and object categorization. Eight experimental conditions (i.e. variation in stimulus set and location) were counterbalanced between subjects. Before and after training, a two hour set of perceptual and general learning tests were conducted to assess the specificity of learning. Seven subjects already completed the experiment, the full sample will include 16 subjects. During training, subjects reached higher levels in the game and enhanced their in-game PL. After training, results show improved PL across trained and untrained stimulus sets and locations. The orientation discrimination threshold upgraded from 4.2 degrees to 3.1 degrees ($p = 0.0074$) and the novel object categorization improved so that subjects could categorize objects which were 4.2 transformations removed from the reference in contrast to 3 transformations at start ($p = 0.003$). These improvements were less stimulus specific than what is typically seen in PL. No large improvements were found on the general learning tests, thus learning might be specific to the trained domains of orientation and object perception, but we await the results from the larger sample for more definitive conclusions. To conclude, perceptual training in a dynamic environment results in domain-specific but not stimulus-specific learning.

P106 - REWARD-EMOTION INTERACTIONS IN THE CONTEXT OF APPROACH/AVOIDANCE RESPONSES

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Emotion and reward signals overlap with regard to their basic valence and the associated response tendencies. Positive stimuli, including reward signals, seem to map onto approach behavior, while negative emotional stimuli trigger avoidance responses. In the present study, we investigate the interaction between reward and overlapping (positive) and non-overlapping (negative) emotional valence in the context of approach/avoidance responses. In experiment 1, participants were instructed to move an animated manikin towards positive face stimuli or away from negative ones using a joystick. In half of the trials participants could earn a monetary reward for fast and correct movements as signaled by the color of the fixation dot overlaid on the faces. We observed a significant interaction between reward and emotional valence driven by response facilitation in reward trials that featured positive stimuli and hence, approach movements. To test whether this interaction is preserved when movement direction is orthogonal to emotional valence, we conducted a second experiment where approach/avoidance was signaled by the gender of the face, rendering emotional expression task-irrelevant. We again observed response facilitation in reward trials that required an approach as compared to an avoidance movement, but this was not further modulated by emotional expression. This may indicate that the effects in experiment 1 are driven by an interaction between reward and movement direction rather than emotional expression itself (which was overlapping with movement direction). Alternatively, mere differences in task relevance could have abolished emotional influences. To test this, another follow-up study will be conducted in the coming weeks.

P108 - EFFECTS OF HOUSING CONDITIONS ON POST-REACTIVATION AMNESIA IN RATS

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Administration of various pharmacological agents upon memory destabilization has been shown to induce amnesia for fear memories. However, the conditions that allow destabilization are subtle, and several studies report failures to interfere with memories after their reactivation. We have recently performed an extensive series of experiments in an attempt to (exactly or conceptually) replicate the amnestic effect of post-reactivation propranolol or midazolam administration on contextual fear memories in rats. Remarkably, we have not been able to replicate any of the published findings. After an exploration of the differences between several labs, we hypothesized that changes in the animals' housing conditions prior to the experiment may influence fear memory malleability, and therefore determine whether or not pharmacologically induced post-reactivation amnesia can be obtained. In order to investigate the effect of housing conditions on fear memory malleability, 50 rats are exposed to enriched, standard, or impoverished housing conditions. After around 6 weeks in these conditions, all animals undergo a 3-day protocol including contextual fear conditioning (day 1), memory reactivation followed by intraperitoneal administration of the amnestic agent or vehicle (day 2), and a test session (day 3). The results of this experiment, which is currently ongoing, will be presented at the conference.

P110 - FAST SYNCHRONIZATION AND SLOW SYNAPTIC LEARNING AS A SOLUTION TO THE STABILITY-PLASTICITY DILEMMA

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The human ability to adapt to a constantly changing environment is remarkable. This relies on the ability to learn quickly about associations between perceptual, motor, and goal representations. Nevertheless, fast learning in neural networks typically leads to forgetting of older information; this is unfortunate because one would like to retain environmental regularities without disruption from novel information. Thus, there exists a tradeoff between being sufficiently adaptive to novel information (plasticity) while retaining valuable earlier regularities (stability). We propose that the brain deals with this issue by relying on two separate, yet interacting learning mechanisms in the same neural structures. The first, fast learning mechanism implements binding-by-synchronization (Fries, 2015) (sync learning). Here, perceptual, motor, and goal representations are bound together by synchronization of neural firing. The second, slow learning, mechanism corresponds to classical synaptic learning. We implemented Rescorla-Wagner, backpropagation and restricted Boltzmann algorithms to the Verguts (2017) model and tested it on a reversal learning task. Simulations demonstrated that a model using only synaptic learning could not deal with sudden changes in task rules. A model using only sync learning could flexibly deal with task rule changes, but overwrote earlier learned rules. Combining sync learning with synaptic learning however, allowed the model to deal with task rule changes without overwriting earlier information. Thus, the resulting model combined (fast) plasticity using sync learning with (slow) stability using synaptic learning to address the stability-plasticity dilemma. In addition to solving this computational problem, we compare the model to neurophysiological and –anatomical data.

P112 - THE (DIS)SIMILARITIES BETWEEN NETWORKS BASED UPON FUNCTIONAL CONNECTIVITY ANALYSIS AND REPRESENTATIONAL SIMILARITY ANALYSIS

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In human neuroscience, advanced neuroimaging methodologies allow us to go beyond localizing where brain activity takes place, and characterize the flow of information between brain regions. Representational similarity analysis (RSA) reveals the similarity between brain regions in the task-related information that they represent. Additionally, functional connectivity analysis (FCA) uncovers how brain regions communicate. Although both methodologies have been applied to the same datasets, none to our knowledge have directly addressed how much the networks resulting from RSA and FCA resemble each other. In the current study, we explore the (dis)similarities between RSA and FCA using data from our previous fMRI study. We hypothesized that brain regions that represent related information would be functionally connected, bringing about a correlation between both methods with regard to the networks they reveal. To address this question, for RSA data, we correlated the similarity among conditions in terms of multi-voxel patterns between regions of interest (ROIs) for every possible ROI pair, so as to assess the representational similarities between ROIs. In FCA, we correlated temporal fluctuations in fMRI signals between ROIs. After removing the effect of anatomical distance between ROIs (using partial correlations), RSA and FCA results correlated moderately (r_s = .47). This result implies that RSA and FCA are partly alike in their results when analyzing the functional organization of brain regions independently of the anatomical distance between those regions. Further research is necessary to explain when and why these methods (dis)agree.

P114 - WHY PSYCHOLOGISTS SHOULD BY DEFAULT USE WELCH'S T-TEST INSTEAD OF STUDENT'S T-TEST

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When comparing two independent groups, researchers in Psychology commonly use Student's t-test. Assumptions of normality and of homogeneity of variance underlie this test. More often than not, when these conditions are not met, Student's t-test can be severely biased, and leads to invalid statistical inferences. Moreover, we argue that the assumption of equal variances will seldom hold in psychological research and that choosing between Student's t-test or Welch's t-test based on the outcomes of a test of the equality of variances often fails to provide an appropriate answer. We show that the Welch's t-test provides a better control of Type 1 error rates when the assumption of homogeneity of variance is not met, and loses little robustness compared to Student's t-test when the assumptions are met. We argue that Welch's t-test should be used as a default strategy.

P116 - TRAVELING WAVES ACROSS THE CORTEX IN CLINICAL GROUPS

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The EEG oscillations in the different frequency bands have long been assumed to be related to, or even to be the building blocks of, sensory-cognitive processes. Ongoing and event-related oscillations have also been considered as potential markers for different neuropsychiatric disorders (Yener & Başar, 2013; Başar et al. 2013; Başar, 2013).

Our main interest lies in the traveling waves, in other words the characterization of EEG oscillations in terms of large-scale spatio-temporal flow. These are waves of activity which travel across the cortex. Traveling waves have been found to be promising in differentiating control groups from clinical participants during specific events, stimuli or task paradigms, and to correlate well with symptom scores (D. M. Alexander et al., 2008, 2009). The goal of our study is to explore new potential markers for participants diagnosed with ADHD, Autism Spectrum Disorder and Major Depressive Syndrome. The study will focus on participants aged between 5 and 21, drawn from the Healthy Brain Network (HBN) database (L. M. Alexander et al., 2017).

Thesis Awards

Nominees

Bachelor Thesis Award 2018

Nominees (in alphabetic order)

Caroline Langhendries

Institut Libre Marie Haps (supervisors: Benoît Grauls & Marie Vander Haegen)

Analyse des influences des rites culturels et mortuaires dans une procédure d'euthanasie en clinique oncologique adulte

Marlies Sijmons

Thomas More Antwerpen (supervisor: Jeroen Camps)

De relatie tussen tijdelijke tewerkstelling en de work-life balance van werknemers. Een onderzoek naar het verband tussen type arbeidscontract en de work-life balance

Agnes Van de Wouwer

Artesis-Plantijn Hogeschool Antwerpen (supervisor: Veerle Van Elsen)

Een kwalitatief onderzoek naar de beleving van 'Rots en Water' bij kinderen met een licht verstandelijke beperking

Robin Vloeberghs

Thomas More Antwerpen (supervisor: Elsje Goris)

Is it because I'm black? Onderzoek naar de shooter bias en de activatie van stereotypen

Master Thesis Award 2018

Nominees (in alphabetic order)

Audrey Baiverlin

University of Liège (supervisor: Adélaïde Blavier)

Comment le sentiment de compétence parentale des parents ayant été victimes de maltraitance et/ou d'abus sexuel durant l'enfance est-il modulé par le soutien à l'autonomie, la satisfaction conjugale et le soutien social?

SEE P12 (POSTER SESSION 2)

Marion Bourgois

Université Catholique de Louvain (supervisor: Valéry Legrain; co-supervisor: Camille Vanderclausen)

L'impact de la représentation de l'espace dans la détection de stimulations nociceptives. Etude en population saine et non-voyante

Joanna Isselé

Université Libre de Bruxelles (supervisor: Fabienne Chetail)

Visual Constraints on letter perception and how experienced readers defy them

SEE S.18.1 (PARALLEL SESSION 18)

Kelsey MacKay

KU Leuven (supervisor: Bert De Smedt)

The role of patterning in children's calculation: A patterning study with first- and second-graders

SEE P55 (POSTER SESSION 1)

Hella Thielen

KU Leuven (supervisor: Bart Boets)

Investigating emotional face processing in children with autism spectrum disorder using fast periodic visual stimulation electroencephalography

SEE S.18.2 (PARALLEL SESSION 18)

Pieter Verbeke

Ghent University (supervisor: Tom Verguts)

Flexible Communication through Neural Synchronization: A Computational Modeling Approach

SEE P110 (POSTER SESSION 2)

PhD Thesis Award 2018

Nominees (in alphabetic order)

Kobe Desender

Vrije Universiteit Brussel (supervisor: Eva Van den Bussche; co-supervisor: Filip Van Opstal)

Metacognition and Cognitive Control

SEE S.8.2 (PARALLEL SESSION 8)

Marlies Maes

KU Leuven (supervisor: Luc Goossens; co-supervisor: Wim Van den Noortgate)

Loneliness in adolescence: Types of loneliness, measurement, and a meta-analytic perspective on group differences

Eleonore Smalle

Université Catholique de Louvain (supervisors: Arnoud Szmalec & Martin Edwards)

The cognitive basis of the child advantage in language learning: A memory-based approach

Ruth Van der Hallen

KU Leuven (supervisor: Johan Wagemans; co-supervisors: Ilse Noens & Jean Steyaert)

Little things, big things: Perceptual organization in children with and without ASD

Jasmine Vergauwe

Ghent University (supervisor: Filip De Fruyt; co-supervisor: Joeri Hofmans)

Personality and Leadership: Trait-perspectives on charisma, curvilinear relationships, and measurement innovations

Jonas Zaman

KU Leuven (supervisors: Ilse Van Diest, Katja Wiech, & Lukas Van Oudenhove)

What did Pavlov's dogs hear? Perceptual alterations through conditioning and their pathogenic potential in chronic pain