

# BAPS2021

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## BAPS2020 Virtual Conference Programme (27th May 2020)

The Belgian Association for Psychological Sciences (BAPS) mini virtual conference was broadcasted on the 27th May 2020. The conference programme consisted of several 'live-events' that were recorded and can be viewed by clicking the links below (to the OSF or YouTube).

The programme started with an introduction to the conference, followed by a presentation by the keynote speaker, Professor Bernard Rimé (UCLouvain). You can click on the title of his talk to view the abstract. In the second stage of the programme, there were three parallel symposia. If you click the title of each symposium, you can view the four abstracts of the presenters. In the third stage of the programme, there was a single live-event for the BAPS prize awards, with presentations from the winners of the BAPS Best Master's Thesis Award and BAPS Early Career Award (abstracts linked to the titles).

In addition to the links to the recorded 'live-events', there are also links to off-line pre-recorded movie presentations of 15 minute open talks and 3 minute poster / short-talk presentations. You can view the movies by clicking the presenter's name (in the grey panels below).

### Introduction and Keynote:

#### OSF / YouTube

9.00      Introduction to the Virtual BAPS2020 Conference  
Keynote  
Bernard Rimé (UCLouvain),  
*Collective responses to collective traumas:  
Synchronization and collective resilience*



10.30      Symposia (1h20 each)

**Symposium 1**  
[OSF / YouTube](#)      Steve Majerus (ULiège) and Wim Fias (UGent),  
*Memory for serial order: Theory and application*

**Symposium 2**  
[OSF / YouTube](#)      Stephan Van den Broucke (UCLouvain) and Ann DeSmet (ULB),  
*Health psychological perspectives on COVID-19*

**Symposium 3**  
[OSF / YouTube](#)      Céline Douilliez (UCLouvain) and Maarten Vansteenkiste (UGent),  
*Perspectives from applied and clinical psychology on COVID-19*

### BAPS Prize Award Presentations:

#### OSF / YouTube

12.00      Introduction by the BAPS President  
Announcement of the best poster prize  
BAPS Best Master's Thesis Award:  
Rakoen Maertens (UGent),  
*Combatting climate change  
misinformation: Longevity of inoculation  
and consensus messaging effects*

### Open talk presentation movies (15m) (Abstracts)

To view the movie, click the author of the presentation.

- \* [Nadja Bodner](#) (KU Leuven), *Mirror, mirror on the wall, which is the fairest of them all? A simulation-based performance comparison of interrater agreement measures for binary time series* (\*awarded with a BAPS2020 best presentation prize)
- [Olivier Desmedt](#) (UCLouvain), *Empirical convergence is needed in conceptualizing the interoception*

|       |   |  |
|-------|---|--|
|       | BAPS Early Career Award:<br>Pieter Van Dessel (UGent),<br><i>Inference training: A new theory-based form of cognitive bias modification to foster adaptive behavioral choices</i> | <i>construct: Trevisan et al's (2019) meta-analysis revisited</i>  |
| 13.00 | End of the public conference  | <ul style="list-style-type: none"> <li>• Judith Goris (UGent), <i>Early sensory perception is less influenced by initial models in autism spectrum disorder</i></li> <li>• MohammadHossein Manuel Haqiqatkah (KU Leuven), <i>Adaptive rewiring on coupled logistic maps with heterogeneous parameters</i></li> </ul> |
| 14.00 | BAPS General Assembly (for BAPS members; see below)   |  |

#### Poster / short presentations (Abstracts).

To view the movie, click the author of the presentation.

- Khawla Ajana (UCLouvain), *The MonAmour Hemianopia Test: An annex test to dissociate hemianopia from hemineglect*
- Letizia Amodeo (UGent), *Understanding the Self across cognitive domains*
- Nil Anarat (KU Leuven), *Affective dynamics in context: Testing the contextual parameter of the Affective Ising Model*
- Zoltan Apa (ULiège), *A role of BDNF polymorphism in age-related recognition memory processes?*
- Alice Bodart (UMons), *Role of physiological reactivity and interoceptive accuracy in the emotional experience of patients with traumatic brain injury*
- Marion Bouffier (ULiège), *Precision of neural representations supporting auditory-verbal working memory*
- Noémie Brison (UCLouvain), *Toward the validation of a scale measuring environmental sexual harassment at the workplace*
- Nawël Cheriet (ULiège), *Shared event-memory for a public event in young and older adults*
- \* Roos Arwen Doekemeijer (UGent), *Start to stop: The role of trigger failures in reward-modulated response inhibition* (\*awarded with a BAPS2020 best presentation prize)
- \* Anais Gautier (UMons), *Source monitoring and neuropsychological deficits in schizophrenic patients with and without hallucinations* (\*awarded with a BAPS2020 best presentation prize)
- Joran Geeraerts (KU Leuven), *Investigating careless responding detection techniques in experience sampling methods*
- Manon Goosse (ULiège), *In the patient's shoes: effect of immersion on psychologist students' communication*
- Camille Harvengt (UMons), *Body image and body (dis)satisfaction in youths from 10 to 18 years of age*
- Jennifer Héraud (UMons), *Biased affective ratings and reduced electrodermal responses in women with fibromyalgia*
- Isabel Hoeven (ULB), *Women discrimination and work motivation (note that there is no movie for this poster)*
- Sandra Invernizzi (UMons) and Manon Demonty (ULiège), *Jacoby-Whitehouse illusion from thematic and taxonomic associations*
- Aurélie Miceli (UMons), *Processing of thematic and taxonomic relationships in ageing and in Alzheimer's disease: Evidences from an EEG study and a semantic priming task*
- Pieter Moors (UCLouvain), *Does low-level orientation sensitivity predict high-level face identification?*
- Jessica Morton (UCLouvain), *Comparison of psychosocial variables and perceived and objective health by the degree of social participation*
- Pauline Querella (ULiège), *Rehabilitation of phonological and semantic control in aphasia: An fMRI case study*
- Florence Requier (ULiège), *Validation of meditation styles measurements: an exploratory study on non-expert meditators*
- Elise Rombaux and Sarah Carneiro Pereira (UCLouvain), *Typical lip reading without motor simulation*
- Ludivine Schils (UCLouvain), *Numerical cognition in Virtual Reality: The sagittal SNARC effect*
- Dylan Van-akelyen (ULiège), *Investigation of visual and verbal inhibition in aging within a similarity-judgement task*
- Ellen Voorrips (KU Leuven), *Great minds think alike: The contagious nature of cognitive control*
- Sarah Wattelet (UCLouvain), *European public theatres and perceived inequalities related to sexual orientation. What about LGB workers in the "queerest art"?*

#### BAPS General Assembly:

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| 14.00 | The General Assembly was attended by BAPS members.<br><i>The Assembly provided an opportunity to hear of all the initiatives taken by the BAPS during the last years and it provided members with the opportunity to be involved in future initiatives.</i> |
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# BAPS2021

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## BAPS 2020 Keynote Speaker

### Collective responses to collective traumas: Synchronization and collective resilience

Bernard Rimé (1)

(1) UCLouvain

Our analysis of Twitter content from users in more than 20 nations in the weeks following the outbreak of the Covid-19 crisis reveals that members of these societies react with a profusion of exchanges in which they share their emotions, and in particular, anxiety and sadness. Such collective sharing of emotions conceals a complex process that performs important social, cognitive, and affective functions for individuals and groups. In this talk, we will review empirical evidence documenting these effects. We will first examine the dynamics of social sharing of emotions that develop in interpersonal situations. We will then show that a similar dynamic develops during collective gatherings that occur in case of a collective emotional event. Next, we will consider how the same process unfolds in a society where individuals are confined and thus unable to gather together. We will conclude by stressing that emotions are tools at the service of social integration and the update of shared knowledge. By fueling social synchronization, emotions assist individuals and groups in their ongoing efforts to develop, in the face of upcoming events, the best possible alignment of this knowledge.

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## Symposium

### Memory for serial order: Theory and application

Steve Majerus (1,2) and Wim Fias (3)

(1) ULiège; (2) Fonds de la Recherche Scientifique FRS-FNRS; (3) UGent

Processing and memorizing the serial order of information (events, words, numbers) is a fundamental ability of our cognitive system. Yet, we know very little about the way the serial order information is represented, both over the short-term and the long-term. In this symposium, we will present recent advancements in our understanding of the cognitive and neural substrates of memory for serial order, and discuss the broader implications of serial order memory deficits.

#### Speaker 1: The neural substrate of serial order coding in working memory

Giulia Cristoforetti (1), Muhammet Ikbal Sahan (1), Jean-Philippe van Dijck (1,2), Steve Majerus (3) and Wim Fias (1)

(1) UGent; (2) Thomas More University of Applied Science; (3) ULiège

Serial order in WM is grounded in the spatial attention system. Spatial coding occurs spontaneously in verbal WM and ordinal position produces spatial biases; begin elements are associated with the left side of the space, end elements with the right side (van Dijck et al., 2011). We investigated the neural substrate of serial order coding in WM, detecting brain regions that contain information about the ordinal structure of the information memorized in a serial order sequence. Evidence showed that the intraparietal sulcus (IPS) is involved in ordinal information coding (Majerus et al., 2009) and in spatial attention (Husain et al., 2007). Also, the hippocampus preserves the temporal order of events (Davachi and DuBrow, 2015) and it is involved in spatial memory (Eichembaum, 2014). 28 adult healthy participants performed a serial order WM task in an event-related fMRI setting. A classifier was trained to distinguish activation patterns associated with the retrieval of an item at the beginning or at the end of a sequence in the anterior and posterior bilateral IPS and bilateral hippocampus. We observed that multivariate neural patterns in the left anterior IPS, right anterior IPS (hIP3), left dentate gyrus were able to discriminate between retrieved items (begin vs end). These regions are both linked to serial order coding and spatial processing. Therefore, the results are consistent with the account of spatial coding in serial order WM.

#### Speaker 2: The developmental neural substrate of serial order learning

Steve Majerus (1,2), Laura Ordonez Magro (3), Arnaud Szmalec (3) and Lucie Attout (1,2)

(1) ULiège; (2) Fonds de la Recherche Scientifique FNRS-FRS; (3) UCLouvain

Hebb repetition learning is a fundamental learning mechanism for sequential knowledge such as language. However, still little is known about its development. This fMRI study examined the developmental neural substrates of Hebb repetition learning and its relation with reading abilities in a group of 49 children aged from 6 to 12 years. In the scanner, the children carried out an immediate serial recall task for syllables sequences of which some sequences were repeated several times over the course of the session (Hebb repetition sequences). We observed that the rate of Hebb repetition learning was associated with modulation of activity in the medial temporal lobe. Importantly, for the age range studied here, learning-related medial temporal lobe modulation was independent of the age of the children. Furthermore, we observed an association between regular and irregular word reading abilities and the neural substrates of Hebb repetition learning. This study suggests that the functional neural substrates of long-term memory for serial order, as instantiated by Hebb repetition learning, do not undergo significant maturational changes in school age children, and could be sustained mainly by implicit sequential learning mechanisms (procedural memory) considered to be fully developed at an early age. Importantly, the neural substrates of Hebb learning remain significant determinants of learning abilities such as reading.

#### Speaker 3: Reading direction influences order processing in verbal working memory

Vesal Rasoulzadeh (1), Jean-Philippe van Dijck (1,2) and Wim Fias (1)

(1) UGent; (2) Thomas More University of Applied Sciences

The ability to maintain sequence of items in working memory (WM) is important for major cognitive tasks, like language and reasoning. Previous research suggests that serial order WM is grounded in spatial attention. It was shown that sequential information

is spatially organized in mental space and retrieval of an item from serial order WM induces a covert spatial shift of attention depending on the position of the item in the sequence. The spatial organization of the serial information is suggested to be influenced by reading/writing direction. In this study, we found behavioral and neural indication (based on recorded EEG data) for the right-to-left organization of serially presented items in Iranian population with right-to-left reading/writing direction. After sequential loading of four letters to WM, when participants retrieved the earliest (last) letter in the sequence, they were faster (slower) to detect a target (a dot) on the right than left visual hemi-field. In ERPs locked to the retrieval of items in the sequence, two components associated with orienting of spatial attention were elicited: EDAN (early directing attention negativity) in posterior and ADAN (anterior directing attention negativity) anterior areas. These components are characterized by larger negativity in Contralateral hemisphere relative to where the cue directs attention (i.e., left hemisphere was implicated when the first letter from the sequence was selected). Our results substantiate the right-to-left organization of serial information in Iranian population at behavioral and neural level. This emphasize the influence of literacy and reading/writing direction on mental organization of sequential information.

#### **Speaker 4: Spatial patterning in working memory as a determinant for mathematical proficiency**

Jean-Philippe van Dijck (1,2), Krzysztof Cipora (3) and Wim Fias (2)

(1) Thomas More; (2) UGent; (3) University of Tübingen, Germany

Research suggests that efficient calculation depends on a proper mental representation of numbers. This representation is constructed in working memory (WM) and takes the shape of a horizontal mental number line. A popular task to measure the strength of this spatial representation is parity judgment, where subjects typically respond faster with left to small numbers and with right to large numbers (the SNARC effect). Studies investigating the link between SNARC and mathematics provide inconsistent results. This is mainly because most studies did not take measurement reliability into account or because narrow measures of mathematics were used. In 4 experiments we investigated the relationship between SNARC and mathematics by optimizing reliability and by considering mathematics as a broad construct (word problems, arithmetic, fractions...). In EXP1, we increased reliability by recruiting a heterogeneous (in age and mathematical background) sample. In EXP2, we boosted between-subject variability by manipulating the degree in which numbers have to be processed implicitly. In EXP3, we tested a broader range of math domains. Finally, in EXP4, we manipulated the degree in which WM is involved in the spatial coding. The strength of the spatial coding has no predictive value for any math domain, except when WM was involved. In this case, the degree of spatial coding was positively related to the overall math score. These observations suggest that organizing our WM in a spatial fashion has positive effects on our mathematical thinking. This has important theoretical implications and can be informative in the context of mathematical learning difficulties.

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## Symposium

### Health psychological perspectives on COVID-19

Stephan Van den Broucke (1) and Ann DeSmet (2)

(1) UCLouvain; (2) ULB

COVID-19 is a health problem of an unprecedented scale in modern history, and the measures that are taken to contain the further spread of the SARS-CoV-2 virus represent the largest behavioural change project in the history of mankind. As experts in health-related behaviour, health psychologists cannot stay sidelined in the debate on how the pandemic must be addressed. In this symposium, we will discuss what health psychology can contribute to containing COVID-19 and dealing with its impact on people's daily lives, both from a theoretical and an empirical perspective. In addition to a theoretical reflection on what health psychology can contribute, it will present preliminary results from cutting-edge ongoing research in Belgium focusing on a disease that has become everyone's concern.

#### Speaker 1: Why health psychology matters to the COVID-19 pandemic

Stephan Van den Broucke (1)

(1) UCLouvain

**Objectives:** Health psychology can help tackle the COVID-19 pandemic and its consequences, as measures to prevent infections imply behaviour change and the impact of the problem creates a need for people to regain control over their lives. This presentation will outline what public health psychology can contribute to addressing COVID-19.

**Method:** Three levels at which public health psychology operates will be considered: a downstream focus on individual behaviour change; a midstream focus on organisations and communities; and an upstream focus informing policies affecting the population.

**Results:** Policy measures to enhance protective behaviour of citizens can be made more effective by relying on behaviour change models. It should also be acknowledged that too much anxiety can elicit cognitive avoidance strategies which minimize the perceived threat or even mitigate the rejection of evidence. Governments should acknowledge the role of health literacy and information bias, communicate clearly about COVID-19 and understand that taking up and acting upon health information is an active cognitive process influenced by context, emotions, and potential biases, whereby false beliefs shared on social media must be countered. Community engagement can strengthen the capacity of the population to deal with the disruptive effects of the pandemic at organisational and community level.

**Conclusions:** Health psychology researchers and practitioners should increase their interest in infectious diseases, recognize that human health must be seen in relation to animal health and sustainable development, and understand how people make decisions, how organizations operate and how communities relate in reaction to crises.

#### Speaker 2: Behave safe!

##### Why do we (not) adopt behavioural measures in the COVID-19 pandemic

Melanie Beeckman (1), Annick L. De Paepe (1), Geert Crombez (1), Fleur Baert (1), Ama Kissi (1), Sarah Maes (1), Maité Van Alboom (1), Dimitri Van Ryckeghem (1), Elke Veirman (1) and Louise Poppe (1)

(1) UGent

**Objectives:** In the absence of medical treatment and vaccination, the COVID-19 pandemic can be controlled by massive and rapid behaviour change. To achieve this, we need to monitor and understand the key factors prompting individuals to adopt the behavioural measures outlined by the government. Two challenges are (1) to bridge the intention-behaviour gap, and (2) to maintain behaviour over a prolonged period of time. The 'Health Action Process Approach' (HAPA) addresses these issues.

**Method:** This study investigates the role of HAPA-based determinants on following the measures, amongst which factors impeding (barriers, e.g. depressed mood, social isolation) or reinforcing (resources, e.g. social support) behavioural maintenance will also be explored. Two surveys were conducted in Dutch-speaking Belgian adults (N = 2379 and N = 821).

**Results:** First results show that the adoption of the guidelines and the effort to maintain the behavioural measures is associated with the HAPA determinants. Moreover, one third of the sample report heightened anxiety, for whom it also takes more effort to follow the guidelines.

**Conclusions:** These findings confirm the role of HAPA determinants in following the COVID-19 guidelines and stress the importance of closely monitoring people's motivation and well-being to ensure compliance to the measures.

**Speaker 3: Socio-demographic, cognitive, and emotional determinants of three health behaviors during Covid-19 outbreak:  
A four weeks online study among French-speaking Belgian responders**

Emilie Banse (1), Alix Bigot (1) and Olivier Luminet (1,2)

(1) UCLouvain; (2) Fund for Scientific Research FRS-FNRS

**Objectives:** We investigated the respective role of sociodemographic, cognitive, and emotional factors that can facilitate or impair three health behaviours recommended to limit the spreading of the Covid-19 pandemic (hand-washing, limitation of public transports' use and limitation of social contacts).

**Methods:** Data were collected through an online survey from March 18 until April 19, 2020 among French-speaking Belgian responders (N = 4840 participants, 75% women, mean age= 44.10). Predictors were sociodemographic indicators, four dimensions of the Theory of Planned Behavior (TPB), emotional states and health anxiety.

**Results:** Hierarchical regression analysis were computed for the three health behaviours. Sociodemographic variables (gender, age, education, medical profession) were significant predictors of the three health behaviours. The components of the TPB explained the largest amount of variance, with intention, attitudes and perceived control predicting the three behaviours, while subjective norms predicting only limitation of social contacts. Negative and positive emotions played facilitating and inhibiting effects depending on the type of behaviour. Finally, health anxiety only predicted hands washing.

**Conclusions:** Our results suggest that the list of significant predictors and the direction of effects depended of the type of health behaviour considered. The role of specific emotional factors in addition to the TPB will be discussed, together with the differential role of age across behaviours. Practical implications related to specific groups that are more or less inclined to follow the recommended behaviours intended to limit the spreading of the pandemic will also be considered.

**Speaker 4: "COVID-19 It's in Your Hands"**

**The development of an online tool to encourage preventive behaviour to reduce COVID19-risk**

DeSmet, A. (1), Gérardin, P. (2), Lauwerier, E. (3), Poppe, L. (3), Roozen, S. (4,5), Peters, G.J. (4,6), ten Hoor, G. (4,5)  
and the Your COVID-19 Risk Team (7)

(1) ULB; (2) UCLouvain; (3) UGent; (4) Academy of Behavior Change, NL; (5) Maastricht University, NL;

(6) Open University of the Netherlands, NL; (7) Your Covid-19 Risk Team: <https://your-covid-19-risk.com/>

**Objectives:** The large adoption of preventive behaviours is crucial to reduce the spread of the Sars-Cov-2 virus. Health psychology and behaviour change science can support people to adopt these new preventive behaviours. An online tool (<https://your-covid-19-risk.com/>) was designed by 150 scientists worldwide and is available in 29 languages. The Dutch version was launched on May 7th 2020 and had reached more than 35.000 users two days later. The purpose of this presentation is to describe the tool development. At the time of the symposium, data will be available.

**Method:** Reasoned Action Approach and Decentralized construct Taxonomies were used as theoretical framework. The tool consists of a risk and safety estimate. The risk estimate was based on a literature review of 110 scientific papers; an expert consultation of 10 virologists and epidemiologists; and an expert consultation with 57 behaviour change/other specialists to prioritize risk factors and equate survey answers to risk estimates. Excessive fear and complacency were avoided in presenting users with feedback on risk estimates. The safety estimate is based on Acyclic Behavior Change Diagrams that align determinants to behaviour change principles and eventually to behaviour. Methods used to support healthy behaviour include behavioural feedback, imagery, reinforcement, mobilizing social norm and techniques to support goal-setting.

**Results and further steps:** Results from this first version will be used to refine and elaborate the intervention component, and to support policy in their efforts to stop the spread of the virus.

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## Symposium

### Perspectives from applied and clinical psychology on COVID-19

Céline Douilliez (1) and Maarten Vansteenkiste (2)

(1) UCLouvain; (2) UGent

In just a few months, the COVID-19 pandemic has severely impacted the lives of citizens living in Belgium and around the world, affecting not only their physical health but also their mental health and well-being. Necessary containment measures have been put in place and have been followed to varying degrees by the population. Those measures have also profoundly changed the way mental health professionals deliver their care.

Applied and clinical psychology have a crucial role to play in better understanding individual differences in adherence to containment measures, in identifying people at risk of developing mental health problems, and in developing and disseminating evidence-based online interventions in this pandemic context. In this symposium, the results of four ongoing studies in Belgium addressing this challenge will be presented and discussed.

#### Speaker 1: Long-term compliance with the lockdown measures in Belgium: The critical role of voluntary motivation

Sofie Morbée (1), Joachim Waterschoot (1), Branko Vermote (1), Bart Soenens (1) and Maarten Vansteenkiste (1)

(1) UGent

**Objectives:** To limit the spreading of the SARS-CoV-2-virus, governments world-wide have introduced much-needed, yet very intrusive measures, the adherence of which requires considerable effort from their citizens. To sustain their efforts in following these measures, it is critical that citizens stay optimally motivated, as reflected by their full ownership or internalization of the measures.

**Method:** The present, unique 6-week motivation barometer study conducted during the entire lockdown period in Belgium involves both the daily influx of new cohorts of Belgian participants (N = 23 845; 74% female) and the longitudinal follow-up of a subsample of citizens that had participated in the first week of the lockdown. Grounded in Self-Determination Theory, we sought to examine the predictive validity of individuals' well-internalized, autonomous motivation to adhere to the measures, when compared to their poorly internalized and non-internalized forms of controlled motivation, both concurrently and over time.

**Results:** Controlling for citizen's felt uncertainty and symptoms of anxiety, well-internalized (but not poorly internalized) motivation was a significant positive predictor of citizens' concurrent adherence to the measures. By the time of the conference, longitudinal analyses will be conducted to examine whether shifts in citizens' motivation types across time relate to the maintenance or drop in their measurement adherence. Finally, mediational analyses will be conducted to examine whether elderly's higher adherence to the measures can be accounted for by their elevated presence of well-internalized motivation.

**Conclusions:** The findings suggest that policy makers do well to adopt a motivating style that fosters internalized motivation.

#### Speaker 2: Exploratory study on the impact of COVID-19 outbreak on the well-being, work, and work-related social interactions of PhD Students in Belgium

Martina D'Agostini (1), Giorgia Carra (1), Marta Walentynowicz (1,2) and Johan W.S. Vlaeyen (1,3)

(1) KU Leuven; (2) UCLouvain; (3) Maastricht University, NL

**Objectives:** The outbreak of COVID-19 around the world led to the introduction of several restriction measures, including social distancing and the lock-down of research facilities. Whereas social distancing is effective to slow-down the spread of a pandemic, it strongly affects the social and working life of individuals. This project focuses on the impact of COVID-19 on the mental well-being, work productivity, and work-related social interactions of PhD students population at KU Leuven. Since around 50% of PhD population at KU Leuven is international, we also investigate the impact of the COVID-19 outbreak on social support and risk of stigmatization of certain groups due to their nationality.

**Method:** About 1000 PhD students at KU Leuven completed an online survey in the period between 25/4 and 3/5. This survey is a great opportunity to examine the concerns that PhD students experience in response to COVID-19 and the measures taken by the Belgian government and the university board to limit the spread of this virus.

**Implications:** Based on this information, we hope to provide KU Leuven and the scientific community with valuable information,

which can be further used to improve the actions directed towards minimizing the impact of this pandemic on the PhD student population.

### Speaker 3: Changes in alcohol-consumption during the COVID-19 lockdown : the role of contextual and psychological factors

Arthur Pabst (1), Zoé Bollen (1), Coralie Creupeleandt (1), Sullivan Fontesse (1),  
Nicolas Pinon (1,2), Martin De Duve (1), Thomas Orban (3) and Pierre Maurage (1)

(1) UCLouvain; (2) Haute Ecole Leonard de Vinci, Brussels; (3) Société Scientifique de Médecine Générale, Brussels

**Objectives:** Concerns regarding the possible effects of the COVID-19 pandemic on alcohol consumption have been voiced very soon after the introduction of the lockdown measures. Some researchers have notably predicted spikes in alcohol use and misuse in response to the stress –and the restriction of usual ways to cope with it– generated by the current situation. Given that such an increase in consumption may have profound public health implications, it is important to investigate changes in alcohol use empirically.

**Method:** To this end, we conducted an online survey among 11000 French-speaking Belgians. Respondents estimated their weekly alcohol consumption before and after lockdown onset, and answered a series of questions on relevant socio-demographic, contextual, social, emotional and motivational variables.

**Results:** Our results centrally show that, although 28% of the respondents reported having increased their consumption, there was a slight decrease in self-reported alcohol use overall, with about 40% of participants reporting no change and a third even reporting a reduction. We further identified significant contextual and psychological predictors of increase/decrease.

**Conclusions:** These results call for nuance in messages addressed to the general population and may point toward potentially useful strategies to mitigate the impact of confinement on alcohol consumption for those at risk.

### Speaker 4: Online consultations by mental healthcare professionals during the COVID-19 pandemic

Tom Van Daele (1,2), Sylvie Bernaerts (1), Eva Van Assche (1), Sam Willems (1), Angélique Belmont (2) and Nele A.J. De Witte (1)

(1) Thomas More; (2) European Federation of Psychologists' Associations

**Objectives:** Online consultations by mental healthcare professionals surge globally as a means to overcome the quarantine measures imposed in relation to the COVID-19 pandemic. A survey by the Project Group on eHealth of the European Federation of Psychologists' Associations explored online consultations' current usage and common questions and concerns. This presentation is based on a preliminary analysis of the quantitative Belgian data.

**Method:** Five hundred fifty-six mental healthcare professionals, of which 459 psychologists, completed a survey on past experience with online consultations, their motivations for (not) using online consultations based on the Unified Theory on Acceptance and Use of Technology, and provided qualitative input on questions and concerns.

**Results:** Results showed that 23 percent had some experience with online consultations prior to the outbreak. During the outbreak, 75 percent relied on telephonic consultations at some point, whereas 87 percent made use of online consultations. Seven percent of professionals relying on online consultations received some prior training. The main reasons for professionals using online consultations (N=484) to do so, were 'the necessity from a public health perspective' (86%) and 'wanting to be available for clients who could otherwise not attend appointments' (70%). Professionals not making use of online consultations (N=72) mostly quoted lack of effectiveness (39%), absence of client interest (38%) and lack of appropriate hard- or software (29%).

**Conclusions:** In conclusion, the majority of respondents made use of online consultations, primarily in the interest of their clients. In order to do so, almost all relied on their knowledge and expertise from conventional practice.

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## BAPS Early Career Award

**Inference training: a new theory-based form of cognitive bias modification to foster adaptive behavioral choices**

Pieter Van Dessel (1)

(1) UGent

Recent years have seen a surge in the popularity of interventions that target common distortions in thinking (Cognitive bias modification: CBM). For instance, in alcohol avoidance training, alcohol-dependent patients repeatedly make avoidance responses to alcoholic drinks and approach responses to non-alcoholic drinks to change maladaptive approach tendencies. Although there is some evidence of CBM's effectiveness as add-on to regular treatment (in alcohol addiction), effects are typically small and recent findings from lab-studies called into question dominant theoretical explanations of CBM effects that draw on associative processes. I present a novel theoretical approach in terms of cognitive inferences, that integrates previous findings and suggests ways to improve CBM into inference training. In this type of training, clients are trained to make adaptive behavioral choices in the context of personally relevant antecedents in light of their consequences for important real-life goals. I discuss preliminary evidence suggesting that inference training might be a useful tool in the treatment of maladaptive behavior.

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## BAPS Best Master's Thesis Award

### Combatting climate change misinformation: Longevity of inoculation and consensus messaging effects

Rakoen Maertens (1,2), Frederik Anseel (2,3) and Sander van der Linden (1)

(1) University of Cambridge, UK; (2) UGent; (3) University of New South Wales, AUS

Previous studies have found that communicating the scientific consensus on human-caused climate change is an effective method to debias beliefs, but that this effect can be thwarted by misinformation. In this preregistered study we explore whether inoculation theory can be used to create cognitive immunity against this misinformation. We investigate whether the positive changes caused by communicating the scientific consensus can be protected from the influence of misinformation, and whether the inoculation effect decays over time. We conducted a new longitudinal experiment (N = 480; Prolific) where we presented a consensus message with an inoculation message, and a misinformation message one week later. Using SEM (Gateway Belief Model), ANCOVA, and difference-in-differences analyses we found a strong initial consensus effect that decays over time and is sensitive to misinformation. We also found that the consensus effect can be successfully protected against misinformation using inoculation, and that the inoculation effect remains stable over time. We discuss how these insights can help to improve inoculation theory development, applied interventions and public policy.

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## Open Talks (offline)

### **Mirror, mirror on the wall, which is the fairest of them all?**

#### **A simulation-based performance comparison of interrater agreement measures for binary time series**

Nadja Bodner (1), Guy Bosmans (1), Francis Tuerlinckx (1) and Eva Ceulemans (1)

(1) KU Leuven

Studying how psychological processes unfold over time has recently become highly popular in behavioral science. In observational studies these intensive time series data are often collected by coding the presence/absence of behavior across time. Having sufficiently high interrater agreement is then obviously quintessential. Assessing interrater agreement of behaviors that are rarely shown may nevertheless lead to puzzling results, with low or negative Cohen's Kappa values but high proportions of agreement. This influence of relative frequency is well documented, but often ignored in practice. We will show that different kinds of serial dependency as they are typically present in time series further complicate inference, because they lead to broader sampling distributions of agreement measures. We compared the sensitivity of four measures - Cohen's Kappa, proportion of agreement, Brennan-Prediger coefficient and Gwet's AC - to different types of serial dependency as well as to relative frequency by running a simulation study. Results revealed that Cohen's Kappa is very sensitive to relative frequency and that all measures are affected by serial dependencies. The Brennan-Prediger coefficient and proportion of agreement remain quite effective for binary time series.

### **Empirical convergence is needed in conceptualizing the interoception construct:**

#### **Trevisan et al's (2019) meta-analysis revisited**

Olivier Desmedt (1,2), Olivier Luminet (1,2) and Olivier Corneille (1)

(1) UCLouvain; (2) Fund for Scientific Research - Belgium (FRS-FNRS)

Alexithymia, a personality trait characterized by difficulties identifying/describing feelings and externally-oriented thinking, is thought to be partially explained by low accuracy in detecting internal bodily signals. In a recent meta-analysis, Trevisan et al. (2019) examined this relationship between alexithymia and different dimensions of "interoceptive awareness" (i.e., the conscious perception of internal states). They found that alexithymia was associated with lower self-perceived (but not objective) ability to detect internal signals. However, we argue that their aggregation rationale and the psychometric value of included measures should be questioned. There is little evidence that measures aggregated within each of the dimensions correlate with each other. When evidence exists, it points to low correlations. Moreover, the criteria used for assigning measures to components were not reported. Finally, many included measures were characterized by validity issues questioning their inclusion in the meta-analysis. We, therefore, proceeded to a re-examination of some associations based on alternative selection and aggregation choices. Based on this alternative meta-analysis, we again found that alexithymia was not significantly associated with the objective capacity to detect internal states, as measured by the Heartbeat Counting Task. Interestingly, however, alexithymia was associated with lower self-perceived ability to detect neutral internal sensations, but higher self-perceived awareness of negatively-valenced sensations. These results are consistent with theoretical models and past empirical studies which suggest that high alexithymic individuals experience sensations as intense and harmful, but have low ability to detect neutral sensations. The current state of interoceptive awareness measurement will be discussed, together with recommendations for future studies.

### **Early sensory perception is less influenced by initial models in autism spectrum disorder**

Judith Goris (1), Senne Braem (1,2), Shauni Van Herck (3), Eliane Deschrijver (1),  
Jan R. Wiersema (1), Bryan Paton (4), Juanita Todd (4) and Marcel Brass (1)

(1) UGent; (2) VUB; (3) KU Leuven; (4) University of Newcastle, Australia

Recent theories attempting to explain symptoms of autism spectrum disorder (ASD) within the predictive coding framework, propose a core deficit in the context-sensitive adjustment of prediction errors in ASD. In a recently published study we indeed showed that sensory prediction errors are less modulated by context in ASD. Interestingly, this decreased context-sensitivity could be caused by either an overestimation of volatility in ASD (i.e., being too fast to update one's model of the world), or by underestimating volatility

(i.e., being slower or “more reluctant” to update one’s initial model). Here we compared an ASD and matched control group (both n=27) on the multi-timescale MMN paradigm, in which tones were presented that were either standard or deviant, and these roles reversed every block. Block length was also manipulated, resulting in slow changing and fast changing alternations. A well-replicated observation in this paradigm is that predictions are shaped by the initial context: for the initial deviant tone predictions are updated slower (resulting in larger MMN in slow changing than fast changing blocks), than for the second deviant tone. Our results show that the ASD group was less influenced by the initial acoustic context than the control group, as their MMN responses to the initial deviant sound were less influenced by block length compared to the second deviant, and this effect correlated with symptom severity. These results suggest that individuals with ASD are less influenced by initial contexts, and update predictions more when contexts change, consistent with an overestimation of volatility in ASD.

### Adaptive rewiring on coupled logistic maps with heterogeneous parameters

MohammadHossein Manuel Haqiqatkah (1) and Cees van Leeuwen (1)

(1) KU Leuven

Adaptive rewiring is the driving force of brain plasticity to form modular, small-world connectivity structure. Highly simplified models for adaptive rewiring represent the dynamic activity of neural masses by coupled logistic maps. Such models have thus far used uniform parametrizations, preventing any cognitive functionality. In order to enable cognitive functions, adaptive rewiring must be robust to non-uniformity of parameters. Moreover, it should enable function-specific structures to emerge from such parameterization. Coupled logistic maps are characterized by two parameters, namely turbulence (constraining node activation) and coupling strength between nodes. We study five parameterization conditions of an adaptively rewiring coupled map network. A baseline condition with uniform values for these parameters is compared with four conditions in which either of the parameters of a subset deviates from the remaining units. To describe the evolution of model network structure, clustering coefficient, average path length, small-worldness, modularity, degree assortativity, edge density, and rich club coefficient are calculated. Different conditions are compared by representing networks as multivariate distributions of local network statistics. The results show that highly modular, small-world structures evolve from random initial conditions, while the structures evolving in different conditions show considerable differentiation. This study offers computational support for robustness of adaptive rewiring algorithm under symmetry-breaking conditions regarding the dynamic evolution of properties characteristic to brain networks. Furthermore, function-specific structures and behaviors emerge from such deviations, implying that functional and structural differentiation can be used to identify functional components in a network, upholding the use of structural and functional connectivity measures in neuroimaging.

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# **The MonAmour Hemianopia Test:**

## **An annex test to dissociate hemianopia from hemineglect**

Khawla Ajana (1), Gauthier Everard (1),  
Thierry Lejeune (1,2) and Martin Edwards (1)

(1) UCLouvain; (2) Cliniques universitaires Saint-Luc, Brussels

Stroke is considered to be the most common cause of death (Lozano et al., 2010) and the third most common cause of disability (Murray et al., 2010). It can leave a person with impairments such as hemianopia and/or hemineglect where the patient has lateralised cortical blindness and/or a deficit in attention to the contralesional side of space. The MonAmour is a target search test that evaluates egocentric and allocentric hemineglect using the REAplan® robot by Axinesis. Although the test shows excellent validity and reliability, it does not evaluate and control for hemianopia, despite the well-known associations between visual field defects and hemineglect. In this poster, we propose a new test that will be implemented on the REATouch® tactile board by Axinesis, along with the MonAmour test. The aim of our new test is to examine the patient's visual fields and detect hemianopia. It is composed of dual control and target detection tasks. We propose to adopt an approach of including practitioners in the design process, and then validating efficiency, effectiveness and measure satisfaction with patients. The poster presentation will focus on the design cycle of the test development, and will propose the methods of validation, and the added value that this test brings to neuropsychology testing.

# Understanding the Self across cognitive domains

Letizia Amodeo (1), Roeljan Wiersema (1),  
Marcel Brass (1) and Annabel Nijhof (1)

(1) UGent

Perceiving ourselves as unified is fundamental to psychological functioning and may influence how the surrounding environment is processed. The so-called “egocentric/self-bias” – advantaged processing for self-relevant stimuli – is believed to foster social competence. Individuals with Autism Spectrum Disorder (ASD) experience persistent social difficulties, which may relate to an atypical sense of self. However, research findings are still inconsistent: several studies suggested a reduced or absent self-bias in ASD, whereas others did not observe differences in self-processing between individuals with ASD and neurotypicals. Moreover, research is lacking in exploring self-biases across different cognitive domains: distinct self-related aspects have been studied separately so far, and self-biases magnitude has been mostly assessed within cognitive domains. Therefore, the goal of the present study is to investigate self-biases across perception, memory and attention, by comparing three well-established self-processing measures, i.e., the shape-label matching task (perceptual domain), the trait adjectives task (memory domain), and the visual search task (attentional domain), within the same experimental procedure. We intend to explore whether self-biases in the different cognitive domains are related, emerging as a result of a common, underlying mechanism, or instead consist in distinct, unrelated effects. Furthermore, associations with ASD symptomatology (10-item AQ, SRS-A) as well as self-consciousness (SCS-R) will be examined.

# **Affective dynamics in context: Testing the contextual parameter of the Affective Ising Model**

Nil Anarat (1), Niels Vanhasbroeck (1), Tim Loossens (1), Merijn Mestdagh (1),  
Sigert Ariens (1), Agnes Moors (1), Wolf Vanpaemel (1),  
Stijn Verdonck (1) and Francis Tuerlinckx (1)

(1) KU Leuven

Understanding the dynamics of our emotional lives has proven a complex challenge, but one that has benefited greatly from recent methodological and technological developments. Based on high intensity affective data and statistical mechanics, Loossens et al. (in press) have proposed a computational model to capture these complexities. The Affective Ising Model (AIM) describes the dynamics of positive and negative affect, and can capture nonlinear, non-Gaussian tendencies in the data. However, contextual information has not yet been integrated into the model. We propose an experimental paradigm to elicit affective fluctuations within known contextual conditions, and test the model's ability to capture affective dynamics in context. Participants engage in a simple gambling task with real monetary rewards, and report on their affective state between trials.

# **A role of BDNF polymorphism in age-related recognition memory processes?**

Zoltan Apa (1), Florence Requier (1), Lucie Angel (1,2), Christine Bastin (1),  
Pierre Maquet (1), Eric Salmon (1) and Fabienne Collette (1)

(1) ULiège; (2) Université François Rabelais, France

Episodic memory difficulties are frequently encountered in normal aging. However, the effect of brain-derived neurotrophic factor (BDNF) genetic polymorphism on decreased memory performance remains largely unclear. BDNF plays a key role in neuronal growth as well as neuronal survival, and has a significant involvement in synaptic processes of memory. Consequently, we have examined the concurrent effect of BDNF genetic polymorphism on recognition performance in young and old adults carrying Val(val/val) and Met (val/met and me/met) alleles of the gene. Our participants were selected from a larger cohort, which provided with blood sample for genetic information extraction and completed a recognition memory task (old/new judgements following an encoding phase in which pictures were presented once or twice) in an fMRI setting. Our final sample consisted of 106 participants. Specifically, the groups were constituted of 56 healthy old adults (age 60-75 years, M=65.6 years) and 50 young adults (age 19-30 years, M=23.8 years), with 28 young and 32 old BDNF Val allele carriers, 22 young and 24 old Met allele carriers. Composite percentage scores were calculated by computing the percentage scores of hits, false alarms, correct rejections and omissions between the groups. Between-group and BDNF differences were assessed with two-way analysis of variance (ANOVA) on these measures. We observed significant group effects for the number of correct rejections (young>old) and false alarms (old>young). However, no main or interaction genetic effects were observed. These data seems suggest that BDNF polymorphism does not have a significant effect on recognition memory performance in aging.

# **Role of physiological reactivity and interoceptive accuracy in the emotional experience of patients with traumatic brain injury**

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

(1) UMons

Majority of patients with traumatic brain injury (TBI) present behavioural disorders. Recent evidences suggest the difficulties in recognizing emotions after TBI may underline these disorders. Moreover, deficits in emotional perception may stem from difficulties in experiencing emotions, but the origin of disturbed emotional experience in TBI need to be defined. Current models postulate that emotional experience results, notably, from the perception of body changes (Sander & Scherer, 2014). However, TBI has been associated to altered physiological reactivity and reduced interoceptive accuracy (IA), corresponding to objective precision in detecting internal bodily sensations. This project aims to disentangle the role of these deficits in the decreased emotional experience in TBI. Secondly, we will examine whether training the physiological reactivity and the IA could increase the emotional experience, and incidentally the social rehabilitation of patients.

This poster presents the design of upcoming studies. Three studies will be conducted to successively examine physiological reactivity and subjective emotional responses while watching emotional films, and the IA, assessed with a heartbeat-detection task, before to train these two processes using biofeedback. The first biofeedback training will aim to increase the heart rate variability, which refers to the variation between heartbeats, with paced breathing. The second directly targets the IA using a heartbeat discrimination task followed by a feedback. Finally, the impact on patients' emotional skills will be assessed with an emotional recognition task and a behavioural scale. Our results should allow a better understanding of emotional process in TBI and an improvement of their behavioral disorders management.

# **Precision of neural representations supporting auditory-verbal working memory**

Marion Bouffier (1), Benjamin Kowialiewski (1,2), Lucie Attout (1),  
Coline Grégoire (1), Christophe Phillips (1) and Steve Majerus (1)

(1) ULiège; (2) Université Grenoble Alpes, France

Working memory (WM) precision is defined as the quality with which representations are stored in WM, and has to be distinguished from WM capacity, which is the quantity of information that can be maintained in WM. This study is the first to assess the neural precision of WM traces for auditory-verbal information, using a functional magnetic resonance imaging (fMRI) approach. In this experiment, we asked 27 young adults to actively maintain 4-syllable nonwords during a 7-second interval. The nonwords were highly similar or dissimilar at the phonological level. Using multivariate voxel pattern analysis (MVPA), we explored the neural patterns associated with each nonword. We hypothesized that if auditory-verbal WM precision is limited, as indicated by the well-established phonological similarity effect in the WM literature, then dissimilar but not similar nonwords should be associated with distinctive neural patterns during WM maintenance. Using Bayesian one sample t-tests on whole-brain classification accuracies, we observed that neural decoding of similar nonwords was at chance level, while neural decoding of dissimilar nonwords was clearly above chance during the maintenance stage. Searchlight analyses showed that the informative neural patterns were located in the dorsal language pathway known to support phonological processing. These results provide evidence for the neural basis of the phonological similarity effect in WM and the limited precision of phonological coding in WM.

# **Toward the validation of a scale measuring environmental sexual harassment at the workplace**

Noémie Brison (1), Florence Stinglhamber (1) and Stéphanie Demoulin (1)

(1) UCLouvain

Sexual harassment at the workplace (SH) is a phenomenon that has been at the core of many scientific studies. However, previous research has mainly focused on individual and interpersonal aspects of sexual harassment (ISH), involving a specific victim and a specific aggressor. Empirical research has thus largely ignored the fact that, in line with its definition, sexual harassment could also occur through more collective behaviors, particularly when the work environment is characterized by humor with sexual connotations, display of erotic or semi-pornographic material or remarks about sexual or sexualized parts of people's body. The aim of our project is to shed new light on the SH literature by investigating an environmental form of sexual harassment (ESH). In this context, the current study is a first step toward the development and validation of a scale to measure ESH in organizational contexts. Following DeVellis' (1991) recommendations, nine ESH items were created or adapted from previous scales measuring ISH and sexism in work environments. These items were then submitted to a large and diversified sample of working women (N = 348) together with scales measuring potential correlates (i.e., ISH, sexism) and outcomes (e.g., job satisfaction, intention to quit the organization). Statistical analyses showed that the scale had a good internal consistency and high item-total score correlations. Moreover, factor analyses revealed that ESH and ISH were two different factors, yet moderately correlated. Our discussion will focus on the future research that is needed to corroborate these encouraging findings and to further assess the validity, the nomological network as well as the predictive ability of the scale.

# **Shared event-memory for a public event in young and older adults**

Nawel Cheriet (1), Adrien Folville (1) and Christine Bastin (1)

(1) ULiège

For years, episodic memory has been seen as a function specific to each individual. Recently, however, the idea that some degree of similarity could exist between memories shared by a large number of individuals has arisen. This study examined the extent to which individuals can share similar memory representations of a public event as well as how this similarity is impacted by aging. Fifty-four young and 43 older participants completed an online survey in which they answered memory questions regarding the fall of the bridge Morandi in Italy on August 2018. In the survey, participants were invited to recall what they remembered about the event and to evaluate the extent to which they rehearsed the event or heard about it in the medias since its occurrence. Recall protocols were coded to measure the number of remembered details by each participant taken individually as well as how remembered details were shared across individuals. Results revealed that older adults recalled more details about the bridge fall and had higher across-participant similarity for remembered information than young adults. Results also showed that older adults heard about the event more often than young adults since August 2018, but it did not explain the observed age-difference in across-participant similarity . Together, these findings suggest that older adults share memory details for a common public to a greater extent than young adults and that across-participants memory similarity for a public event is not conditioned by the degree of exposure to the remembered episode in the media.

# **Start to stop: The role of trigger failures in reward-modulated response inhibition**

Roos A. Doekemeijer (1), Frederick Verbruggen (1) and C. Nico Boehler (1)

(1) UGent

Response inhibition is the ability to stop ongoing responses and is typically conceptualized as a race between a go process and a stop process. Although the latency of the go process can be measured, the latency of the stop process ('SSRT') has to be estimated computationally. For this, most research assumes that the stop process is initiated without fail, disregarding the fact that, on some trials, the stop process is most likely not triggered at all ("trigger failures"). Yet, ignoring such trigger failures systematically leads to underestimations of SSRTs (Logan, 1994, in Dagenbach, D., & Carr, T.H. (Eds.)). To address this systematic bias in SSRT estimations, Matzke, Love, and Heathcote (2016, Behavior Research Methods) recently developed a method (BEESTS-WTF) that allows trigger failures to be accounted for when estimating SSRTs. We have employed this new method to re-analyze data of previous studies, which had used traditional SSRT-estimation methods to observe that reward availability led to shorter SSRTs. From the re-analyses, however, it appeared that the difference in reward conditions attributed to SSRTs mainly relies on a lower trigger failure rate for the reward condition instead. The present study is therefore one of the first to show that within-subject condition differences (such as reward) that manifest themselves as a difference in SSRT in traditional analyses are in fact driven by differential trigger failure rates. This, in turn, likely converges with notions that put more emphasis on processes afferent to ultimate response inhibition.

# **Source monitoring and neuropsychological deficits in schizophrenic patients with and without hallucinations**

Anaïs Gautier (1), Aurelia Rendon de la Cruz (1),  
Laurent Lefebvre (1) and Mandy Rossignol (1)

(1) UMon

Memory for source is at the core of episodic memory retrieval. Source memory has been found to be affected in schizophrenia, possibly because of a general deficit in executive functions. Among schizophrenic symptoms, hallucinations disturb source monitoring abilities, in such a way that hallucinating patients misattribute their self-generated thoughts to external sources. The present study aimed to study source monitoring in patients with and without auditory hallucinations and to examine the possible impact of neuropsychological deficits. Fifteen schizophrenic patients (SP) without auditory hallucinations, 15 schizophrenic patients with auditory hallucinations (SPH) and 15 healthy controls (HC) were submitted to a source memory task (SMT) distinguishing two internal sources, consisting in read aloud or to verbalize self-generated words ; and two external sources in which they heard words or saw pictures. A complementary neuropsychological assessment evaluated attentional, memory and executive functioning. Results showed no group difference in accuracy for reading and self-generating conditions, but patients recognized significantly less stimuli that were heard or seen. Moreover, SPH were less accurate than SP in the hearing condition. Concerning the degree of confidence, patients were more confident in their wrong answers than HC, without group difference for correct answers. The two groups of patients did not significantly differ on the neuropsychological assessment, but results at the SMT were positively correlated with memory and executive performances. These results suggest specific source monitoring deficits in remembering stimuli coming from external sources, possibly because of a less active encoding of stimuli in these conditions.

# **Investigating careless responding detection techniques in Experience Sampling Methods**

Joran Geeraerts (1) and Peter Kuppens (1)

(1) KU Leuven

Experience Sampling Methods (ESM) refers to methods used to repeatedly gather self-report data from participants in the context of their daily life. With advances in mobile technologies, this method has gained increasing adoption within the field of social and health sciences. However, the unique opportunities that ESM brings to the field do not go without challenges. One such challenge, and a known source of invalidity in self-report data, is careless responding or insufficient effort responding. Although there is a growing literature on techniques that detect this type of responding in classic survey data (Curran, 2016; Meade & Craig, 2012), the phenomenon is, to the best of our knowledge, not yet studied in the context of ESM. Yet, availability of such methods could be highly instrumental in increasing the data quality in this type of research. To fill this gap, we both adapted known techniques for CR detection in survey data to the ESM context, and developed novel techniques specifically for the ESM context, based on response time and response content parameters. Next, in two studies we evaluated the mutual interrelations between these techniques, how they are predictive of actual (self-rated or instructed) careless responding itself, and how accurate combining them can be for identifying careless responses in the context of ESM research.

# **In the patient's shoes: Effect of immersion on psychologist students' communication**

Manon Goosse (1) and Sylvie Willems (1)

(1) ULiège

**Introduction:** Empathy is a core competency in any health care relationship. In the context of psychotherapy, empathy is an important predictor of efficacy. Immersive videos (IV) give the user the opportunity of living a story in a first person perspective which enhances cognitive empathy and impact attitudes toward outgroup members. However, these conclusions are based on self-reported measures and no evidence exists regarding the IV's impact on actual behavior. This pilot study aimed to explore the impact of immersion into old-patient shoes on empathetic communication with an actual old-patient.

**Methodology:** Students in psychology were randomly assigned to an experimental (EC, N=22) or control condition (CC, N=22). In the EC, participants were immersed in the skin of an old woman confronted to ageist attitudes in context of psychological counseling, via 360° video. In the control group, the subjects received only a few instructions to improve their communication. Empathetic communication skills were assessed before and after both conditions through role-play with an old woman.

**Results:** Immersion enhanced empathetic communication by increasing the number of open-ended questions ( $p=0.02$ ) and concretizations about patient's perspective ( $p=0.05$ ).

**Conclusion:** This pilot study shows interesting results. It implies that immersion can not only enhance cognitive empathy and attitudes, but also lead to improved communication skills. It would be interesting to replicate this study with a larger sample and to assess the sustainability of improvements over the long term.

# **Body image and body (dis)satisfaction in youths from 10 to 18 years of age**

Camille Harvengt (1), Aurelia Rendon de la Cruz (1), Pauline Delannoy (1),  
Laurent Lefebvre (1), Justine Gaugue (1) and Mandy Rossignol (1)

(1) UMons

Body image satisfaction is an important component of self-esteem and psychological health. Body dissatisfaction is particularly frequent in adolescence, in relation with body changes due to puberty. This study was designed to explore the dimensions of body image (dis)satisfaction in adolescents. Participants were 84 school students (28 boys) ranging from 10 to 18 years of age. They completed an original inventory evaluating concerns about body image, perceived body defaults, body satisfaction and reactions to idealized beauty in the media. They provided information about their gender, height, and weight, and completed the Physical Self Perception Inventory, the Rosenberg Self-Esteem Scale and the Revised Child Anxiety and Depression Scale. Results showed that 49% of adolescents reported concerns with body image, with a higher prevalence in girls and older adolescents, while body dissatisfaction was reported in 60% of the sample, in relation with body concerns. Self-esteem and physical self-perception were reduced in adolescents with body concerns or body dissatisfaction, but anxiety and depression were increased only in adolescents with body concerns. Older adolescents (14-18) reported significantly more defaults than younger ones, with less variability in girls who robustly mentioned their nose, stomach, bust and acne. Finally, participants report ambiguous reaction to idealized beauty in the media, some expressing anxiety/inferiority while others found a motivation to take care of their body. Our study confirms that concerns about body image and body dissatisfaction are significant in adolescence, particularly in girls, and increase with age, which might be worth exploring in future studies.

# **Biased affective ratings and reduced electrodermal responses in women with fibromyalgia**

Jennifer Héraut (1,3), Khira El Bouragui (1, 2,3),  
Alice Bodart (1,3), Laurent Lefebvre (1,3) and Mandy Rossignol (1,3)

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Fibromyalgia syndrome (FMS) is a chronic disorder characterized by widespread musculoskeletal pain, fatigue and mood issues. The central sensitization theory postulates an abnormal processing of sensory impulses in FMS, possibly associated to deficits in emotional appraisal. This study aimed to evaluate whether FMS disturbs subjective appraisal and electrodermal responses to neutral and emotional pictures, and to non-painful tactile stimuli. To this aim, 22 women diagnosed with FMS and 20 healthy control (HC) women paired on age and education were asked to appraise 45 positive, negative and neutral pictures from the IAPS and eight tactile stimulations. After each stimulus, participants had to provide an evaluation using the Self-Assessment Manikin (SAM) on three dimensions: valence, arousal and dominance. Participants completed the Beck Depression Inventory - 13 items before to complete the experimental task and electrodermal activity (EDA) was monitored during the entire experience. Results showed that EDA did not differ between groups for visual stimuli, but FMS women evaluated positive pictures more negatively than HC. Moreover, FMS women produced reduced EDA for tactile stimuli as compared to HC, without group difference on the subjective appraisal of these stimuli. Finally, FMS patients showed greater levels of depression than HC and, in the complete sample, depression score was correlated to reduced EDA responses for visual and tactile stimuli. These results suggest a dissociation between physiological responses and subjective evaluation of external stimuli in FMS, as well as a need to distinguish effects due to FMS from those linked to low mood and depressive affects.

# Women discrimination and work motivation

Isabel Hoeven (1) Jan Van der Linden (1) and Michel Sylin (1)

(1) ULB

Women discrimination exists in organizations: for example, glass ceiling prevents women from following a career path according to their abilities (Philippe, 2013). Some studies show women are motivated to start their entrepreneurship business, among others, because of organizational discrimination (Buttner & Moore, 1997; & Rey-Marti, 2015). However, few studies investigate the implication of women's discrimination on motivation in an organizational context. Decreasing work motivation is related to gender discrimination (Cornejo, 2007; & Channar et al., 2011). So this work states that: perceived individual discrimination negatively influences work motivation. Data were collected using an online self-report questionnaire. Based on Roussel (2000), a work motivation scale was created to investigate the relationship with discrimination in women. The sample regroups 103 active women between 18 to 63 years ( $X=32,2$ ) especially in health ( $N=33$ ), administration (22), human sciences (13) or hotel & food (12). Mostly Belgian ( $N=50$ ), French (48) or Italian (2) women. Both work motivation ( $X=2,04$ ;  $SD=0,07$ ) and individual discrimination ( $X=2,84$ ;  $SD=0,06$ ) are evaluated by a 5 Likert scale. One interesting result is that both linear and quadratic discrimination predictors are significant. Meaning that perceived individual discrimination impacts work motivation. There is probably a complex interaction between these two variables, integrating others such as satisfaction, stress level, commitment, professional relations, personnel factors, expectations.

# **Jacoby–Whitehouse illusion from thematic and taxonomic associations**

Sandra Invernizzi (2\*), Manon Demonty (1\*), Emma Delhaye (1),  
Laurent Lefebvre (2), Cynthia Collette (2),  
Isabelle Simoes Loureiro (2) and Christine Bastin (1)

(1) ULiège; (2) UMONS

(\*The first two authors contributed equally to this presentation)

Using a word recognition task, Jacoby & Whitehouse (1989) have showed that a word briefly presented before test item (e.g. dog-DOG) enhanced participants' 'old' responses. The effect was observed using semantically related primes (e.g. dog-CAT) and associated with an increased contribution of either familiarity (i.e. recognition without recall of encoding context), or recollection (i.e. retrieval of encoding details). Such difference could be explained by the variability of the semantic relation between words (taxonomic, attributes, context,...) whereas thematic (brush-HAIR) and taxonomic (lion-TIGER) relationships are particularly salient. In this study, the impact of thematic and taxonomic primes was contrasted and the contribution of recollection and familiarity was assessed using the Remember-Know-Guess paradigm (Tulving, 1985). The word recognition task was performed by 30 adults ( $24.6 \pm 4.5$  yo) in 3 blocks varying the nature of the prime (repetition; taxonomic; thematic), each presented with a word-learning phase (32 words) and a 'yes-no' recognition task with 32 'old' and 32 'new' words. A masked 33ms word either related or unrelated preceded each test word. Results showed a significant interaction between the type of words (new; old) and the priming context (related; unrelated) for the proportion of 'yes' and 'know' responses. More 'yes' and 'know' responses following a related prime (versus unrelated) occurred for false alarms only. Such effect was observed across all conditions, supporting the idea that strict control of the type of conceptual priming (as opposed to all-out priming) leads to an enhanced feeling of familiarity for unstudied words in the same way as repetition priming.

# **Processing of thematic and taxonomic relationships in ageing and in Alzheimer's disease: Evidence from an EEG study and a semantic priming task**

A. Miceli (1), C. Collette (1), E. Wauthia (1),  
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The knowledge stored in semantic memory includes information about categories and features, as well as the semantic relationship between concepts. In the semantic network, taxonomic (which refers to similarity relations based on shared features) and thematic (which refers to contiguity relations based on co-occurrence in events or scenarios) links are both salient. In Alzheimer's disease (AD), there are contrasting results regarding the pattern of taxonomical and thematical deterioration in the semantic network. Also, a remaining issue is to determine whether semantic processing of both kinds of links is embodied, as suggested by the upholders of the embodied cognition (e.g. Barsalou, 1999, 2008) and if the sensorimotor system takes differentially part in the semantic process in ageing and in AD. In order to investigate these questions, sensorimotor sensitive electroencephalogram rhythm will be analyzed through young adults (study 1), healthy elderly people (study 2) and AD participants (study 3) performing a semantic priming task in which the target could be preceded either by a thematically (milk-cow) or a taxonomically (pig-cow) related prime compared to an unrelated condition (lemon-cow). The stimuli were controlled for lexical frequency, familiarity, age of acquisition and visual complexity. Within the framework of the extended sensory-functional theory, the sensory and motor properties of our targets will be investigated in order to explore the impact of those variables on the semantic processing. The protocol of our experiment as well as the preliminary results regarding the impact of the variables recruited on young adults' semantic processing (study 1) will be presented.

# **Does low-level orientation sensitivity predict high-level face identification?**

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Face identification is primarily tuned to horizontal orientations. When asked to categorize or discriminate between facial identities, observers reach highest performance for upright faces filtered along the horizontal orientation axis. Sensitivity drops along oblique orientations until it reaches lowest performance for the vertical orientation. Observers show a high degree of inter-individual variability in their face identification orientation tuning curves, and a natural question to ask is whether this inter-individual variability stems from inter-individual variability originating early in the visual system, e.g. primary visual cortex. In this exploratory study, we reanalyzed a previously published data set to explore whether performance on a low-level contrast increment detection task (where detection of horizontal increments is worse compared to oblique increments) is predictive of performance on a high-level face identification task. One of our analyses showed that the worse observers are to detect horizontally oriented contrast increments (compared to obliquely oriented contrast increments), the stronger their face inversion effect is for faces filtered along the horizontal orientation axis. A further exploration of simple correlations between sensitivities for all conditions showed that sensitivities in the contrast increment task are correlated across observers, but not for the face identification task. Interestingly, horizontally filtered inverted faces clustered together with the sensitivities on the contrast increment task. As no such correlation was observed for upright faces, this could indicate that a horizontally filtered inverted face is processed more like the stimuli in the contrast increment task. We tentatively conclude that low-level orientation sensitivity can influence high-level face processing.

# **Comparison of psychosocial variables and perceived and objective health by the degree of social participation**

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Although the literature supports the positive link between (a) social engagement and (b) psychological well-being and perceived health, it is still unclear whether social engagement is also related to objective health indicators. This study compares three levels of participation in social activities during leisure time: (1) active participation involving social engagement in group activities (e.g., volunteers); (2) passive participation in group activities (e.g., beneficiaries); and (3) no social participation. Affiliates (N = 7021) of the Belgian Christian Mutuality reported their degree of social participation and consented that their annual health care data (presence/absence of consumption for each category of drugs in the WHO classification, number of contacts with the general practitioner) would be examined in relation to their responses concerning (a) perceived social integration (social support, loneliness, social relationships, family structure, social fusion), (b) psychological well-being (self-esteem, sense of meaning, Pemberton happiness scale), and (c) perceived health. Results confirmed the strong positive association between level of social engagement, psychological well-being and perceived health. Furthermore, the higher was the level of social engagement, the less frequent were the contacts with medical practitioners and the lower was the overall use of medication. This effect was particularly noteworthy for medication related to the nervous system. While passive participation suffices to feel better than no social involvement at all, respondents with active participation are those evidencing higher psychological well-being and lower use of medication.

# **Rehabilitation of phonological and semantic control in aphasia: An fMRI case study**

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Aphasic patients may suffer from phonological or semantic inhibitory control deficits which are characterized by difficulties at the level of verbal inhibition and working memory. Very few treatment methods are available for this type of deficit. We investigated the feasibility of a phonological control treatment program in an aphasic patient, at both behavioural and neural levels. CT (77 y/o) presented with aphasic symptoms characterized by verbal inhibition deficits in various language and verbal memory tasks. Phonological control was trained with a series of tasks in which CT had to name a stimulus while inhibiting a phonological distractor presented along with the target. Baseline measures were obtained via a word immediate serial task, with both trained and untrained words. CT and 33 control subjects also completed a phonological and a semantic inhibition task in an MRI scanner. At the end of the training program, CT's performance had significantly improved, for both treated and untreated words, suggesting a transfer effect of phonological inhibitory training rather than spontaneous recovery given that CT's performance was still impaired in semantic inhibitory tasks (as well as other phonological control tasks). A reduced number of intrusion errors and verbal paraphasias in naming and immediate serial recall tasks was further noticed. At the neural level, CT showed increased activity in fronto-temporal areas associated with phonological processing and control, as compared to controls. These results highlight the specificity of treatment programs of verbal inhibition, and by extension, of verbal language control by distinguishing between phonological and semantic inhibitory processes.

# **Validation of meditation styles measurements: An exploratory study on non-expert meditators**

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Construct models of meditation measurements are not fully validated. Several scales exist; however, the assessed underlying cognitive processes are not clearly defined. The objective of our study was to analyse various scales and to propose a rigorous construct of meditation styles based on these scales. Exploratory factor analysis was performed on 131 healthy older participants' data from the Silver Santé Study. Participants were naïve to meditation practice. Systematic oblimin rotation was used to control the correlation between the following scales: Multidimensional Assessment of Interoceptive Awareness (MAIA), Drexel Defusion Scale, Compassion for Others Scale, Prosocialness Scale and Self-Compassion Scale. According to the Kaiser criterion, the employed factor model culminated in four distinct factors across two axes. Specifically, two mindfulness axes, and two compassion axes. Regarding the two mindfulness axes, we can notice one meta-awareness/attention regulation axis which includes items of the MAIA: Noticing, Attention Regulation, Emotional Awareness, Self-Regulation, Body Listening and Trusting. The second axis is focused on cognitive defusion and is composed of Drexel Defusion Scale as well as of two items of MAIA: Not Distracting and Not Worrying. Concerning the two compassion axes, the first one describes attitudes towards others and is composed of the Compassion for Others and the Prosocialness Scales, while the second axis depicts aspects of being self-centered and includes the Self-Compassion Scale. The factors identified in a population naïve to meditation practice largely overlap to the theoretical typology distinguishing between attentional (first axis), constructive (third and fourth axes) and deconstructive (second axis) meditation styles.

## Typical lip reading without motor simulation

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In face to face conversations, viewing a speaker's lip and mouth movements severely influences the interpretation of the sounds that he or she produces. What is the mechanism underlying lipreading ? According to a popular hypothesis, lipreading operates through a covert unconscious imitation of the observed speech movements in the observer's motor system – a motor simulation of the observed speech gestures. If this hypothesis is true, then, lipreading should be hampered in individuals deprived of lip motor representations who, as a consequence, are incapable of motorically simulate observed lip movements. To test this prediction, we used a McGurk task and compared the magnitude of the influence of visual speech on the interpretation of auditory speech in typically developed participants and in several individuals born with congenitally reduced or completely absent lip movements in the context of the Moebius Syndrome. Both groups were equally influenced by a speaker's lip and mouth movements. This fact implies that typical lipreading efficiency does not require motor simulation.

# **Numerical Cognition in Virtual Reality: The sagittal SNARC effect**

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The SNARC effect is demonstrated by the presentation of a number and a magnitude judgement, with results showing quicker responses with the left hand when number is lower, and quicker responses with the right hand when the number is high (Dehaene 1992). While the effect has also been demonstrated in the vertical axis, few research has tested the sagittal axis. Participants were seated at a table, wearing a head-mounted VR display, and with a response box aligned to the sagittal axis, with near and far buttons. Numerical stimuli were presented in a 3D virtual environment, and participants judged if the number (1-4, 6-9) was greater or lower than five. In the experiment, the near-far buttons were associated to low-high responses for half of the trials, and vice versa for the other trials. Participants pressed a starting button and released the button when the number was displayed in VR. This allowed measurement of preparation time (between stimulus presentation and response initiation) and action time (between response initiation and near-far button response). We predicted an interaction between number magnitude and the position of the button (near-far). The results showed a significant interaction for preparation time, but no interaction for action time. For preparation time, responses to the near button were quicker with low than high numbers, and responses to the far button were quicker with high than low numbers. These data replicate the SNARC effect, but for the sagittal axis, and furthermore, explain that the SNARC effect particularly influence preparation time.

# **Investigation of visual and verbal inhibition in aging within a similarity-judgement task**

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Inhibition is a central component of executive control that allows us to focus on target stimuli and to ignore non-target stimuli. Aging has been associated with reduced inhibitory abilities, but data are contradictory as regards the domain-specificity versus generality of this impairment. The aim of this study was to conduct a comprehensive assessment of inhibitory abilities in aging by focusing on visual and verbal domains (phonological and semantic modalities). A similarity judgement task was administered in all three modalities to thirty young (20-40) and thirty elderly (60-80) adults. Participants had to judge which item out of two was the most similar to two target items. In the facilitation condition, the correct test item was preactivated via a prime appearing briefly before the trial; in the inhibition condition, the prime preactivated the wrong test item which then had to be inhibited for selection of the correct test item. An inhibition score was calculated by subtracting the performance in the inhibition condition from the facilitation condition (for correct responses and reaction times). For correct responses, we observed that the inhibition score was larger in the elderly vs. young group in each of the three modalities. For response times, the inhibition score was larger in the elderly group for the visual and semantic modalities but not phonological modality, meaning that they had more difficulties to inhibit the wrongly primed item. These results confirm inhibitory impairment in healthy aging, in a manner that appears to be rather domain-general (in verbal and visual domains).

# **Great minds think alike:**

## **The contagious nature of cognitive control**

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Task performance can be influenced by the mere presence of another person. In previous work, it has been shown that this depends on what this other person is doing. More specifically, it has been observed that the degree of cognitive control one person exerts during a task affects the amount of cognitive control exerted by another person. This has led to the conclusion that cognitive control is contagious. As this is a bold claim, the current study aims to replicate these results by using a task requiring a higher degree of cognitive control and additionally explores the influence of interpersonal relationships on this effect. In our study, two participants (A and B) are seated next to each other while individually performing a Simon task on their side of the screen. While task difficulty of participant B remains neutral throughout the experiment, participant A either receives an easy task requiring little cognitive control or a difficult task requiring more cognitive control. In line with previous work, we expect that the task performance of participant B will be modulated by the task difficulty of participant A. Furthermore, we hypothesize that this effect is stronger when people have a stronger interpersonal relationship.

# **European public theatres and perceived inequalities related to sexual orientation.**

## **What about LGB workers in the "queerest art"?**

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Alisa Solomon (2002) calls it "the queerest art": the theatre is generally considered a "safe space" for LGB workers. Indeed, the professional world comprised in our patriarchal system discriminates these workers because of their sexual orientation which disturbs the surrounding heteronormativity. In order to assess the potential inequalities between heterosexual workers and their non-heterosexual counterparts in theatres despite their presumed fairness, we studied the perceptions of inequality of theatre members among 25 public theatres in 18 European countries. We also investigated the possible link between these perceptions and the strength of patriarchal culture. 247 participants - 23% of whom defined themselves as non-heterosexual - answered our online questionnaire. Many variables were assessed for the purposes of a wider study, including work precariousness and perceived discrimination in interpersonal (i.e. mixed or unmixed colleagues meeting in their free time) and organisational (i.e. experiencing the discomfort of discrimination) terms. As independent variables, the United Nations national Gender Inequality Index (GII) and the patriarchal organisational culture (PatOC, Shaffer et al., 2000) were taken into account. Following t-tests and multiple regression analyses, no significant differences were found between non-heterosexual and heterosexual workers, except for hearing discriminatory/sexist comments made by co-workers. In addition, we observed independent associations between GII on one hand and PatOC on the other and each of our dependent variables. We will eventually discuss the implications of this study for generalized equality at the societal level.