

The MonAmour Hemianopia Test:

An annex test to dissociate hemianopia from hemineglect

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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

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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

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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?

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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

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Majority of patients with traumatic brain injury (TBI) present behavioural disorders. Recent evidences suggest tha 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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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 ± 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

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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 scenarii) 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 analyzing 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.