

RESUMOS | ABSTRACTS

20.º Encontro da APPE | 20th APPE Meeting

27-28 Março | 27-28 March 2026

Escola de Psicologia, Universidade do Minho



Foto: Nuno Gonçalves

SESSÃO 1 | SESSION 1**9h20 | Time, Number, and Food in the Mid-Session Reversal Task: Disentangling Their Effects With a Novel Procedure***Alejandra Salinas, Armando Machado, & Marco Vasconcelos**Universidade de Aveiro*

To understand behavioral flexibility in starlings, we designed a novel Mid-Session Reversal task. On each trial, the birds faced two keys, a consummatory key displaying either a red light (S1) or a green light (S2) and a switching key displaying a white light. Pecks at the consummatory could yield a food reward; pecks at the switching key changed the stimulus displayed on the consummatory key. During trials 1 to 40, only pecks at S1 could yield food; during trials 41 to 80, only pecks at S2 could yield food. To maximize food, the birds had to peck the switching key until the reinforceable stimulus was displayed on the consummatory key (S1 during the first, S2 during the last trials) and then pecking at the consummatory key. After learning the task with a 15 s Intertrial Interval (ITI), the starlings were tested with either a 30-s ITI or a 7.5-s ITI. At issue was when (trial, time) preference changed from S1 to S2—the time or trial-based Point of Subjective Equality, PSE. Analyzed in terms of time, PSE differences between training and testing were small, varied across individuals, and showed no consistent trend. Analyzed in terms of trial number, and in marked contrast with previous studies, there were fewer anticipation errors (PSEs before trial 41) and perseveration errors (PSEs after trial 41). Learning to produce the correct stimulus on each trial seems to have enhanced the influence of local cues (choice outcome) and reduce the influence of global cues (trial number, time).

9h40 | The Credit-Assignment Challenge in the Ephemeral Reward Task: Beyond Stimulus Identity*Guilherme Hoffmann, Armando Machado, & Marco Vasconcelos**Universidade de Aveiro*

In the ephemeral reward task, subjects learn to choose between a suboptimal and an optimal alternative, A vs B. Selecting the suboptimal option A produces an immediate reward and ends the trial. Selecting the optimal option B produces an immediate reward, removes stimulus B and allows a subsequent response to A for a second reward. Performance in this task varies widely across species: cleaner wrasse, grey parrots, and starlings solve the task, whereas pigeons, primates, and rats typically do not. It has been hypothesized that learning is hindered because the second reward occurs in the presence of the suboptimal stimulus, A, even though access to it was caused by the initial choice of the optimal option, B. The present study tested this hypothesis by training 12 starlings concurrently on three tasks differing in the stimulus associated with the second reward. In the standard condition, choosing the optimal option, B, led to re-presentation of the suboptimal stimulus, A. In a second condition, choosing the optimal option, B, led to the presentation of a novel stimulus, C. In a third condition, choosing the optimal option, B, led to the presentation of the same optimal stimulus, B. Six subjects learned to choose optimally in all problems, four failed only in the standard condition, one failed in the standard and novel conditions, and one failed in all three. Overall, acquisition was also slower in the standard condition. These results support the credit assignment hypothesis but also suggest the importance of factors beyond stimulus identity.

10h00 | Not All Signals Are Equal: Suboptimal Choice in Starlings*Susana Vieira, Armando Machado, & Marco Vasconcelos**Universidade de Aveiro*

Recent research shows that several species, such as pigeons and starlings, often make suboptimal choices, preferring an Informative option over a Non-informative one despite a lower overall reward probability (20% vs. 50%). Choosing the Informative option produces an S+ (20%) always followed by food or an S- (80%) always followed by no food; choosing the Non-informative option produces S1 or S2, with food delivered on 50% of trials regardless. To examine whether this preference is driven by the information conveyed by the terminal stimuli, we ran three experiments. In Experiment 1, starlings were required to make an observing response to access all terminal stimuli (S+, S-, S1, and S2). In Experiment 2, only the S- and S2 were observable, whereas S+ and S1 were not. In Experiment 3, only the S+ and S1 were observable, whereas S- and S2 were not. If information were the primary driver of suboptimal choice, then observing responses should remain high, for this option, across conditions, because in each case the visible stimuli still reliably predict whether food will (or will not) follow. Instead, observing and choice were selectively elevated when the reward-predictive cue S+ was observable. In Experiments 1 and 3 (S+ observable), observing was high and choice was suboptimal; in Experiment 2 (only S- and S2 observable), observing decreased and choice shifted to the optimal Non-informative option. Overall, these findings support the hypothesis that conditioned reinforcement, rather than information, primarily drives suboptimal choice.

SESSÃO 2 | SESSION 2

10h40 | **Contribution of Visual Object Properties to the Onset Repulsion Effect: The Role of Size and Texture in the Perceived Onset Position of a Moving Target**

*Rodrigo Ribeiro Freitas, Samuel Silva, Fábio Morais, Eduarda Rodrigues, João Lopes, & Nuno Alexandre De Sá Teixeira
Universidade de Aveiro*

When observers are asked to indicate the spatial location at which a moving target first appears, their judgements are systematically displaced backward along the direction of motion, a phenomenon coined as the Onset Repulsion Effect (ORE). Previous research has shown that this effect is particularly pronounced for ascending targets, revealing a vertical anisotropy in onset spatial localization. Furthermore, by manipulating perceived target mass through kinematic information or direct sensorimotor experience, prior studies have shown that the magnitude of the ORE increases for targets judged as heavier. These findings have led to the proposal that the ORE may reflect a cognitive tendency to attribute a "natural history" to dynamic events, similar to the preparatory windup before throwing an object, resulting in a backward overcompensation of onset location. The present study investigated whether visual cues commonly used to infer object mass in everyday perception, namely size and texture, modulate onset spatial localization. Two experiments were conducted in which participants localized the onset position of moving targets that varied in size alone (Experiment 1) or in size combined with surface texture (Experiment 2). The results revealed that target size reliably modulates the magnitude of the ORE, with larger targets producing greater backward displacements, thus extending previous findings to visual size cues. In contrast, surface texture had no effect on onset localization, suggesting that the ORE is selectively sensitive to mass-related information and that its modulation depends on the representational level at which such information is inferred. The results are discussed in relation to stored representations of object dynamics and the role of embodied causal expectations in shaping spatial localization.

11h00 | **Knowing Is Not Doing: Divergent Visuospatial Profiles in Artistic Creation and Artistic Perception**

Javier Eseverri, María Soledad Beato, Alicia Alvarez-Martinez, Mar Suarez, Juan Sebastián Gonzalez-Rodriguez, & Olivia Rivero

(1)Faculty of Psychology, University of Salamanca, Spain, (2)Faculty of Educational Sciences, University of Las Palmas de Gran Canaria, Spain, (3)Faculty of Fine Arts, University of Salamanca, Spain, (4)Faculty of Geography and History, University of Salamanca, Spain

Visual arts involve visuospatial processing abilities; however, it remains unclear whether these abilities are exclusively associated with artistic creation or are also linked to artistic perception, two distinct forms of artistic experience. This study examined whether the cognitive advantages typically observed in visual artists are also present in art historians, who are highly exposed to art but do not engage in systematic artistic creation. The sample comprised 150 undergraduate students: 50 Fine Arts students (artistic creation and perception), 50 Art History students (artistic perception only), and 50 Psychology students (no formal artistic training). Participants completed standardized measures of spatial visualization (Paper Folding Test), mental rotation (Mental Rotation Test), visual imagery vividness (Vividness of Visual Imagery Questionnaire), and observational drawing ability (Hand Drawing Task). Fine Arts students significantly outperformed both Art History and Psychology students in spatial visualization. They also showed higher mental rotation accuracy than Art History students, with a marginal difference relative to Psychology students ($p = .052$), and faster rotation times than the

other groups. In contrast, both Fine Arts and Art History students reported significantly higher visual imagery vividness than Psychology students, with no difference between them. Drawing performance was superior among Fine Arts students, whereas Art History and Psychology students did not differ. These findings suggest that different forms of artistic experience are associated with distinct cognitive advantages. Specifically, artistic creation appears to be linked to enhanced spatial transformation and drawing abilities, while artistic perception experience is selectively related to greater imagery vividness.

11h20 | **Would You Like to Update Now? Depends on Who's Asking: Human or AI?**

João O. Santos, Ana Filipa Martinho de Almeida, Cristina Mendonça, Vitória Melita, & Kiall Hildred

ISPA - Instituto Universitário de Ciências Psicológicas Sociais e da Vida

Whether people's trust in AI advisory systems is well-calibrated to the system's performance is a critical but underexplored question. In high-stakes domains, such as hiring and promoting, miscalibration can amplify biases. Answering the question requires understanding not only AI systems' accuracy, but also people's advice-taking behavior. In this talk, I will present four preregistered experiments (total N = 4084), in which participants read a CV and provided an initial rating of the likelihood of either inviting that candidate for an interview or promoting that worker. Then, participants read advice, imagining it came from either an AI system or a human HR professional, and then provided a final rating. We modeled advice-taking as a two-stage hurdle process, treating the decision to update, and the magnitude of updating (among those who updated), as different outcomes. We found consistent evidence of egocentric discounting (i.e., final judgments remaining closer to initial judgments than to the advice) and, importantly, AI aversion (i.e., people trust and rely more on human than identical AI advice). Further, trust significantly mediated the relationship between advisor type and advice-taking behavior (both the decision to update and the magnitude of updating). The last two experiments manipulated advice quality, showing that people are sensitive to it (i.e., discounting biased advice more than unbiased advice), though AI aversion operated independently, persisting across both conditions. Together, these findings highlight the need to promote appropriately-calibrated trust—reducing reflexive discounting of AI advice without encouraging uncritical reliance on it.

MESA REDONDA | ROUNDTABLE DISCUSSION**11h40 | Psicologia Experimental: Percurso, Desafios e Futuro**

Alexandra Reis, Armando Machado, & São Luís Castro

A mesa redonda “Psicologia Experimental: Percurso, Desafios e Futuro” reúne os antigos Presidentes da APPE para uma reflexão sobre o percurso da Psicologia Experimental em Portugal, desde a criação da Associação até aos desafios e oportunidades que a área enfrenta atualmente. A sessão pretende promover uma discussão aberta sobre o papel da Psicologia Experimental no panorama científico contemporâneo, a sua relevância para a formação de novas gerações de investigadores e as perspetivas de desenvolvimento futuro da área. Ao visitar momentos-chave da história da APPE e ao olhar para os desafios emergentes da investigação psicológica, esta conversa pretende contribuir para uma reflexão coletiva sobre os caminhos futuros da Psicologia Experimental em Portugal.

SESSÃO 3 | SESSION 3**14h10 | Does Working Memory Capacity Constrain the Precision of Judgments of Learning?***Alessandra S. Souza, & Julia Krasnoff**(1) Centro de Psicologia da Universidade do Porto, Faculdade de Psicologia e Ciências da Educação da Universidade do Porto; (2) Universidade de Zurique*

People need to monitor how well they learn to adjust their study behavior effectively. Yet, so far, it is unclear whether people reliably differ in their learning-monitoring ability and what cognitive resources might constrain it. Research has consistently shown that working memory capacity predicts learning outcomes, but the source of this relationship is also unknown. One potential link is through monitoring: people with higher working memory capacity might be better able to assess their learning and adjust accordingly. The goals of the present study were twofold: (a) to examine if learning monitoring is a psychometric construct; and (b) to assess its relationship with working memory capacity. Across two experiments (N = 102 and N = 132), participants completed several learning tasks - spanning verbal and visual domains - while providing judgments of learning (JOLs) after each study item (item JOL) and at the end of the learning phase (global JOLs). Participants also completed three separate working memory tasks. Confirmatory factor analysis showed that item and global JOLs formed two separate factors reflecting reliable individual differences in global and item-level monitoring accuracy. Although working memory capacity was associated with learning performance, it did not predict the accuracy of item JOLs. For global JOLs, negative correlations with working memory capacity were observed in some instances, reflecting the tendency for high-capacity people to underestimate their learning. In sum, learning monitoring is one facet of metacognition in which people reliably differ. This ability, however, does not seem constrained by immediate memory capacity limitations.

14h30 | Entre o "Era uma Vez" e o "Isto Aconteceu": A Relação Entre Suspensão da Descrença e Distorções de Memória*Ana Lapa, Filipe Loureiro, & Teresa Garcia-Marques**William James Center for Research, Ispa - Instituto Universitário*

Já há muito que sabemos que a apresentação de informação falsa leva a distorções congruentes de memória (memórias falsas; e.g., Loftus & Palmer, 1974). Curiosamente, apresentar essa informação em contextos implausíveis (e.g., em histórias irrealistas) reduz o nível da distorção mnésica (menos memórias falsas; Rapp et al., 2014). Nesta apresentação, abordaremos o papel que a tendência do indivíduo em se envolver em tarefas que exigem pôr de lado as suas crenças – como é exigido neste tipo de contextos irrealistas – tem nesta redução de memórias falsas. Para o efeito, medimos a cronicidade da suspensão da descrença dos indivíduos (Garcia-Marques et al., submetido) num contexto experimental semelhante ao utilizado por Rapp e colegas. Em dois estudos, manipulámos o contexto em que a informação factual e falsa foi apresentada: contextos realistas verídicos e falsos (e.g., histórias narrando eventos apresentados como verídicos ou falsos) e contextos irrealistas (e.g., histórias ficcionais). O desempenho de memória foi posteriormente avaliado num teste de cultura geral realizado imediatamente (estudos 1 e 2) e após um intervalo de retenção de semanas (estudo 2). Os resultados revelam que a cronicidade da suspensão da descrença é um preditor dos níveis de aprendizagem e do efeito protetor que os contextos irrealistas têm na memória. Discutimos estes resultados em torno de como a capacidade de suspensão da descrença de um indivíduo afeta a forma como este aprende a informação em diferentes contextos.

14h50 | **Apresentação de uma Bateria Online em Português Para Avaliar a Capacidade de Memória Operatória (Working Memory) Numa Amostra de Participantes Portugueses e Brasileiros**

Nuno Gaspar, Alessandra S. Souza, Márcia Maria Peruzzi Elia da Mota, & Carlos Eduardo Nórt

1. e 2. Universidade do Porto, Faculdade de Psicologia e de Ciências da Educação (Portugal). 3. e 4. Universidade Estadual do Rio de Janeiro, Instituto de Psicologia (Brasil)

Esta comunicação apresenta a bateria oWMC-PT (online Working Memory Capacity – PorTuguês), um conjunto informatizado de tarefas online adequado para medir a capacidade de memória de operatória (working memory) nos falantes do português europeu e do português do Brasil. A bateria é composta por três medidas de memória operatória: a tarefa de amplitude de leitura (reading span), a tarefa de amplitude de simetria (symmetry span) e a tarefa de amplitude de memória para dígitos em ordem direta (digit span). As tarefas podem ser realizadas online, nos próprios dispositivos dos participantes, em aproximadamente 30 minutos. A oWMC-PT foi especificamente concebida para utilização com populações portuguesas e brasileiras, mas pode ser facilmente adaptada a qualquer idioma (sendo disponibilizada uma versão em inglês no nosso repositório). As três tarefas avaliadas apresentaram níveis bons de confiabilidade (alfas de Cronbach superiores a .80) e correlacionaram-se positivamente entre si (menor $r = 0.21$, $p < .001$), formando um único fator latente representativo da capacidade de memória operatória. Observou-se invariância configural e métrica, mas não invariância escalar, entre as duas amostras analisadas de falantes de português europeu ($N = 195$) e de português do Brasil ($N = 154$). Apesar da semelhança estrutural e de cargas fatoriais ser observada, as pontuações latentes não podem ser comparadas diretamente entre os grupos. A bateria oWMC-PT constitui um instrumento versátil para a avaliação da capacidade de memória operatória em amostras online — particularmente no contexto do mundo lusófono, mas potencialmente também noutras línguas. A bateria encontra-se disponível em: <https://osf.io/ubcez>

15h10 | **Impossible to Ignore? Smartphone Notifications are More Distracting Than Other Sounds for Memory of Educational Content Among Undergraduates**

Luisa F. Henao, Karlos Luna, & Sara Cadavid

National University of Colombia (Universidad Nacional de Colombia)

Previous research has shown that smartphone use (e.g., messaging or social media engagement), concurrent with attention or memory tasks impairs performance. However, constant interactions with smartphones, often driven by social reward dynamics, can increase covert attentional bias toward smartphone cues, such as notifications, leading to cognitive costs. For example, vibrating notifications from another person's device during encoding can disrupt memory in academic contexts. In this study, we investigated whether smartphone notifications in vibration mode during encoding of educational materials impair memory more than other distracting sounds. First, 686 university students completed a survey assessing perceived distractibility of common environmental sounds in academic settings (e.g., construction noise, conversations, ringtones, vibrating notifications). Results indicated that smartphone-related sounds were not rated as highly distracting compared to other environmental noises. Following these findings, an experiment was conducted with 50 undergraduates. Participants encoded information from an educational video under three conditions: vibrating notifications from a smartphone, a high-pitched beep commonly used in attentional paradigms (both presented during specific moments of the video), or no interruption. Recall performance was significantly poorer in the vibrating notification condition compared to

both the beep and no-interruption conditions. In sum, although smartphone stimuli are not perceived as distracting, when they appear during a memory task, they have a greater distracting effect than other auditory stimuli, possibly because of their strong social component, which makes them a highly relevant stimulus. In educational environments where smartphone presence is pervasive, notifications may represent a subtle yet significant threat to learning and memory processing.

SESSÃO 4 | SESSION 4**15h40 | Entre a Expectativa e a Realidade: Previsão Afetiva nas Eleições Legislativas de 2024***Amanda Seruti, Magda Saraiva, Margarida V. Garrido, & Mário B. Ferreira**CICPSI, Faculdade de Psicologia, Universidade de Lisboa*

A previsão afetiva (affective forecasting) refere-se à capacidade de antecipar emoções futuras e é frequentemente marcada por um viés de impacto, em que se estimam exageradamente a intensidade e a duração das emoções (Wilson & Gilbert, 1995). Estudos eleitorais têm explorado pouco o papel da ideologia política e da polarização neste processo. O presente estudo examinou a previsão afetiva no contexto das eleições legislativas portuguesas de 2024. A recolha de dados ocorreu em três momentos: antes da eleição (N=657), quando os participantes anteciparam os seus níveis de felicidade perante cenários hipotéticos de vitória da direita ou da esquerda, tanto para o momento imediatamente após os resultados como para algumas semanas depois (grupo de previsão); e após a eleição, com participantes distintos reportando a felicidade experienciada logo após a divulgação dos resultados (N=610) e algumas semanas depois (N=427) (grupo de experiência). Os resultados replicaram estudos anteriores ao mostrar um viés de impacto robusto: o grupo de previsão antecipou emoções mais intensas e duradouras do que as reportadas no grupo de experiência. Contudo, a ideologia política modulou essas diferenças: participantes de direita sobrestimaram a felicidade e os de esquerda sobrestimaram a infelicidade em relação ao que foi experienciado. Além disso, os participantes não previram adequadamente o ajustamento emocional ao longo do tempo, estimando níveis de (in)felicidade semelhantes imediatamente e semanas após os resultados. Finalmente, a polarização associou-se à maior intensidade emocional e amplificou o viés de impacto, indicando que posições ideológicas mais extremas aumentam o erro na previsão afetiva.

16h00 | The Faces of Intuition and Analysis: Visualizing Cognitive Styles Through Reverse Correlation*Filipe Loureiro, Teresa Garcia-Marques, Gonçalo Oliveira, Ana Lapa, & Cristina Mendonça**Ispa – Instituto Universitário (WJCR)*

Do people associate specific facial features with cognitive styles? Using reverse correlation, we visualized implicit mental representations of "intuitive" and "analytical" faces and tested their social-cognitive consequences. Study 1 employed a reverse correlation paradigm where participants iteratively selected faces that appeared more "intuitive" or "analytical" from generated noise-embedded base images. Aggregating selections across participants produced two classification images (CIs) revealing distinct prototypes of "intuitive" and "analytical" faces. Study 2 submitted these CIs to independent ratings on trait dimensions. The intuitive CI was perceived as warmer, more trustworthy, honest, able to feel emotions, open-minded, and happier. The analytical CI was rated as more dominant, rigid, leaderlike, older, and more masculine. These impressions suggest that facial representations of "intuition" and "analysis" are encoded primarily in socio-affective cues, rather than in explicit competence signals. Study 3 tested whether these prototypes guide person-task allocation. Participants read everyday scenarios varying in cognitive demands (affective intuition, holistic pattern recognition, logical analysis, probabilistic reasoning, neutral) and, on each trial, made a forced-choice decision about which of two people (intuitive vs. analytical faces) they would ask for help, based on first impressions. We tested face-scenario matching across scenario types. To enable a within-subjects design without stimulus repetition, we employed a novel signal-preservation face generation method, creating multiple photorealistic exemplars per CI, preserving diagnostic signal features while varying identity-irrelevant characteristics (noise). Together, these studies suggest that cognitive-style impressions are encoded in

facial cues (primarily socio-affective dimensions rather than competence) and may influence social interaction choices in everyday-life, including help-seeking.

16h20 | **Context Sensitivity and Inhibitory Control in the Presence of Others**

Gonçalo A. Oliveira, & Teresa Garcia-Marques

William James Center for Research, Ispa-Instituto Universitário

Previous research suggests that the presence of others may enhance inhibitory control relative to social isolation. Concurrently, social presence is thought to heighten context sensitivity, increasing the activation of both task-relevant and task-irrelevant information. The present experiment examined how these two processes jointly influence inhibitory control and associative learning in Stroop performance across contexts varying in proportions of congruence. One hundred and nine participants completed a Stroop task either alone or in the presence of others. The task comprised three blocks. In the first block, participants performed a two-colour Stroop task in either a mostly congruent or incongruent context, establishing strong colour–congruence associations. The second block introduced a different pair of colours presented with an equal proportion of congruent and incongruent trials, thereby eliminating systematic contingencies (transfer set). The final block combined the preceding blocks context and transfer sets to assess the interaction between contextually learned associations and inhibitory control. Results replicated previous evidence that inhibitory control is enhanced under social presence, relative to isolation, in equal-proportion contexts. However, this pattern was reversed in mostly congruent contexts. In the first block, a mostly congruent context elicited greater interference in social presence than isolation. Similarly, in the final block, embedding the transfer set within a mostly congruent context impaired the previous effectiveness of inhibitory control in dealing with the transfer set. These findings are discussed in terms of heightened context sensitivity in social settings and its implications for the recruitment and dynamic balance of proactive and reactive control mechanisms.

16h40 | **Determinantes Cognitivos da Tomada de Decisão em Saúde: O Papel das Crenças Conspiratórias e Pseudocientíficas**

Margarida Vaz Garrido, Catarina Santos, Oleksandr Horchack, & Magda Saraiva

(1) Centro de Investigação e Intervenção Social, Iscte-Instituto Universitário de Lisboa (2) William James Center for Research, Ispa-Instituto Universitário

A disseminação global de informações falsas, impulsionada por teorias da conspiração e pela diminuição da confiança na ciência, tem fragilizado a adesão à medicina convencional e a tratamentos baseados em evidência. Embora estudos anteriores tenham associado crenças conspiratórias e desconfiança na ciência a comportamentos como hesitação vacinal, sabe-se menos sobre o seu impacto nas decisões individuais de saúde, incluindo a adesão a tratamentos recomendados por médicos. Compreender por que razão algumas pessoas optam por alternativas não comprovadas é essencial para promover decisões informadas. Participaram no estudo 152 indivíduos que avaliaram 16 cenários de consultas médicas, variando sintomas, diagnósticos e tratamentos recomendados (convencionais vs. não convencionais), controlando-se idade, género e contexto profissional dos médicos. Os participantes indicaram a probabilidade de aderir a cada tratamento, avaliaram características dos médicos (calorosidade, competência, confiança e dominância) e preencheram medidas de crenças conspiratórias, mentalidade conspiratória, crenças pseudocientíficas e confiança na ciência. Globalmente, os resultados revelaram que crenças conspiratórias e pseudocientíficas mais elevadas, assim como menor confiança na

ciência, se associaram a menor adesão a tratamentos convencionais e maior aceitação de alternativas não convencionais. As características dos participantes e dos médicos mostraram efeitos limitados na intenção de aderir aos tratamentos médicos propostos.

17h00 | **Sessão de Pósteres A & Pausa Para Café | Poster Session A & Coffee Break**

Consulte na página 21 os resumos dos posters da Sessão A

SESSÃO 5 | SESSION 5**18h00 | TMS-EEG Reveals Causal Dynamics of the Premotor Cortex During Musical Improvisation***Pedro T. Palhares, Sasha D'Ambrosio, & Óscar F. Gonçalves**Proaction Lab, Faculdade de Psicologia e de Ciências da Educação, Universidade de Coimbra*

Musical improvisation illustrates the brain's capacity for flexible, creative motor control, yet despite extensive neuroimaging research on the neural correlates of musical improvisation, the causal mechanisms underlying this complex behaviour remain poorly understood. Transcranial magnetic stimulation combined with electroencephalography (TMS-EEG) offers a unique window into the causal dynamics of cortical function by directly perturbing neural activity and measuring the resulting spatiotemporal response patterns. In this proof-of-concept study, we aim to demonstrate the feasibility of combining perturbational neuroscience with ecologically valid musical performance. In doing so, we aim to generate novel insights into the dynamic reconfiguration of the premotor cortex during musical improvisation.

We employed transcranial magnetic stimulation combined with electroencephalography (TMS-EEG) to probe state-dependent cortical dynamics in the left dorsal premotor cortex (PMd) of professional jazz pianists ($n = 5$) during improvisation, sight-reading, and rest. Multiple convergent analyses revealed distinct cortical signatures during improvisation: reduced local mean field power, decreased phase-locking of evoked responses, and preserved but gain-modulated early components as revealed by Correlated Components Analysis. These findings suggest that improvisation is characterized by attenuated PMd excitability and more variable response timings, while preserving the fundamental architecture of cortical responses. This perturbational signature supports a neural efficiency model of expertise whereby expert musicians achieve creative flexibility through training-induced streamlined, optimized cortical processing. Our results establish TMS-EEG as a powerful approach for investigating the causal dynamics of creative cognition and demonstrate how the brain reconfigures its response properties to support internally driven motor performance.

18h20 | Neural Correlates of Music Training: A Systematic Review and Voxel-Based Meta-Analysis*Rafael R. Ribeiro, Ana I. Correia, Maria V. Silva-Nunes, Daniel Martins, Joaquim Rádua, & César F. Lima**Universidade Católica Portuguesa; ISCTE - Instituto Universitário de Lisboa*

Many studies relate music training to differences in brain structure and function, typically suggesting that such differences reflect plasticity. The findings are heterogeneous, however, and most evidence is correlational, precluding causal inferences. Some longitudinal studies also raise interpretative issues due to limitations, such as small sample sizes and lack of randomization. Our review and meta-analysis focused on structural and functional neuroimaging data and included both cross-sectional and longitudinal studies to examine the brain correlates of music training in healthy individuals. A total of 130 studies were reviewed ($N = 3,535$; 1,787 musicians or participants assigned to music training and 1,594 nonmusicians or controls). Four voxel-based meta-analyses of cross-sectional studies (gray matter structure, auditory processing, motor/audiomotor processing, and visual/audiovisual processing) revealed associations between music training and increased brain volume/activity in regions involved in auditory processing, emotion, and executive-motor functions. A narrative synthesis of white-matter studies suggested associations between music training and the anatomy of the right internal capsule, a region implicated in voluntary motor control. Evidence from longitudinal studies was limited, though. Whole-brain analyses revealed no consistent structural or functional effects. Only three randomized studies with active control groups reported significant results through ROI analyses, but these supported only a minority of hypothesized

effects. It is possible that pre-existing differences between musicians and non-musicians (e.g., genetic, environment, gene-environment interactions) can help explain findings from cross-sectional evidence. Future longitudinal research should prioritize rigorous designs and standardized training protocols to improve comparability and causal inference.

18h40 | **CT-Optimal Touch Modulates Spinal Somatosensory Processing**

A. Ribeiro-Carreira, Mariana Oliveira, Ricardo Gonçalves, Diego Pinal, Adriana Sampaio, & Alberto J. González-Villar
Universidade do Minho

C-tactile (CT) afferents are a specialized class of unmyelinated nerve fibers that respond optimally to gentle, caress-like touch. Although CT-fiber stimulation has been shown to reduce pain, the underlying mechanisms remain poorly understood. One proposed explanation is that CT activation inhibits nociceptive processing at the spinal level. This study explored whether CT-optimal touch modulates spinal somatosensory activity. Somatosensory evoked potentials (SEPs) were elicited through electrical stimulation of the left median nerve and recorded using combined electroencephalography (EEG) and electrospinography (ESG). A 17-electrode montage centered over the 6th cervical vertebra captured spinal responses. Participants underwent two conditions: CT-optimal brushing of the left forearm using a robotic stimulator, and a no-touch control condition. Spinal activity was quantified by analyzing the amplitudes of the N13 and P22 SEP components, which reflect segmental postsynaptic activity. Preliminary findings show that CT-optimal stimulation increases the N13 and the P22 spinal component compared to the no-touch condition, suggesting a modulation of early somatosensory processing. These results suggest that CT-optimal touch exerts both bottom-up and top-down influence on spinal somatosensory processing. Such modulation may contribute to the understanding of the analgesic properties of CT-fiber activation and enhance our understanding of how affective touch interacts with other somatosensory pathways.

SESSÃO 6 | SESSION 6

9h00 | **Cracking L2 Morphological Processing: The Impact of Prime Duration**

Ana Isabel Fernandes, Juan Haro, Ana Duarte Campos, Pilar Ferré, & Montserrat Comesaña

1Cipsi, University of Minho, 2Department of Psychology and CRAMC, Universitat Rovira i Virgili, 3School of Psychology, University of Greater Manchester

Masked priming studies examining the timing of morphological processing in second language (L2) speakers remain limited. Existing research typically contrasts transparent (e.g., farmer–FARM), pseudo-derived (e.g., corner–CORN), and orthographic (e.g., cashew–CASH) conditions, yet findings in L2 are inconsistent. While some studies report priming effects for transparent and pseudo-derived conditions but not for orthographic controls—suggesting native-like morphological decomposition—others observe significant priming in the orthographic condition, indicating a stronger reliance on form overlap. Moreover, recent evidence suggests that commonly used prime durations (33–80 ms) may be too short to capture morphological processing in L2 speakers, potentially contributing to these inconsistencies. This study investigated how European Portuguese (EP)–English bilinguals process English suffixed words by manipulating prime duration in a masked priming lexical decision task across transparent, pseudo-derived, and orthographic conditions. Using a within-participants design, EP–English bilinguals and native English speakers (control group) completed two experimental sessions differing in prime duration (50 vs. 150 ms). We predicted that longer prime durations would enhance transparent and pseudo-derived priming while reducing orthographic effects, yielding a more native-like processing pattern. Results from bilinguals showed significant priming effects across all conditions, regardless of prime duration. This pattern suggests that lexical processing in this group is primarily driven by form overlap rather than morphological decomposition, and that increased prime exposure may be insufficient to induce native-like decomposition. Data collection for native speakers is ongoing, and final group comparisons will be discussed within current theoretical models of L2 morphological processing.

9h20 | **Can Early Foreign Language Exposure Shape Inhibitory Control Development? A Two-Wave Preschool Follow-up From the B-Minds Project**

Natália Guerra, Diana R. Pereira, & Ana Paula Soares

Universidade do Minho

Most evidence from early foreign-language exposure (FLE) programs in educational settings concerns to children's language development, leaving open whether benefits can extend to executive functions, such as inhibitory control (IC) — a core component that emerges early-on and supports goal-directed behaviour. B-Minds is a longitudinal project conducted in a private nursery school in which infants and toddlers were exposed to English as a foreign language, during approximately half of their daily school routines. Based on the children's nursery attendance, we derived FLE groups reflecting the dose of exposure to English prior to preschool entrance. We present the results of 66 Portuguese preschoolers (Mage= 45.18, SD = 3.24 months) assessed twice in the first and second preschool years using the "Fish and Sharks" task from the Early Years Toolbox (Howard & Melhuish, 2017). The task indexes IC as the ability to inhibit a prepotent motor response (touching the screen) on inhibitory trials. Performance was analysed with generalized linear mixed-effect models (GLMMs). Results showed that at the age of 3, children who had previously attended the nursery for 1 or 3 years performed significantly better than peers who began FLE only at preschool, but interestingly the same was not verified for children with 2 years of nursery attendance. However, by the age of 4, group differences were no longer observed. Results were

discussed based on whether early FLE confers a transient advantage in IC and whether later preschool experience attenuates initial differences, in accordance with the fade-out hypothesis reported in early-intervention research.

9h40 | **Personality Modulates the Morphosyntactic Processing of Emotional Words: Evidence From ERPs**

Ana I. Fernandes, Isabel Padrón, Isabel Fraga, & Montserrat Comesaña

Insituto de Psicoloxía (IPsiUS), Universidade de Santiago de Compostela, Spain; CIPsi, School of Psychology, University of Minho, Portugal

Recent event-related potential (ERP) studies have observed individual differences in the morphosyntactic processing of emotional words (e.g., Fraga et al., 2021). Likewise, personality differences, particularly in Conscientiousness and Extraversion, have been shown to influence morphosyntactic processing (e.g., Jiménez-Ortega et al., 2021). However, the extent to which personality affects the interaction between grammar and emotion has not yet been explored. The present ERP study aimed to examine whether personality differences modulate the morphosyntactic processing of emotional words. Sixty-two native Spanish speakers read sentences such as "El/Los detective/s desvela/n la verdad" [The detective/s reveal/s the truth], in which verb emotionality (pleasant, neutral, unpleasant) and number agreement between the subject and the verb (match, mismatch) were manipulated. Participants performed a grammaticality judgement task. Personality traits were assessed using the Spanish version of the Big Five Inventory-2 (Gallardo-Pujol et al., 2022). Results replicated the typical biphasic pattern, with a grammaticality effect in the LAN component followed by a grammaticality effect in the P600 component. An emotionality effect was observed for the N400 component, suggesting an increased difficulty in the semantic processing of unpleasant verbs. Interestingly, Conscientiousness differences modulated the grammaticality effect in the LAN component, with participants scoring low in Conscientiousness showing a larger effect. Additionally, an emotionality effect for the P600 component was observed in participants with low Agreeableness scores, who showed a larger positivity for pleasant verbs. Overall, these findings provide evidence that personality traits modulate grammatical and emotional processing. Implications for our understanding of individual differences in language comprehension are discussed.

10h00 | **Julgar Contradições em L1 e L2: Evidência Para a Ilusão de Falsidade**

Magda Saraiva, Sara Félix, & Margarida Vaz Garrido

(1) William James Center for Research, Ispa-Instituto Universitário (2) William James Center for Research, Universidade de Aveiro (3) Centro de Investigação e Intervenção Social, Iscte-Instituto Universitário de Lisboa

Processar informação numa língua não nativa (L2) exige maior esforço cognitivo do que na língua nativa (L1), devido à menor fluência e ao vocabulário mais limitado. Este esforço pode gerar disfluência, reduzindo a confiança na informação e afetando os julgamentos de verdade baseados na familiaridade. Embora estudos mostrem que a Ilusão de Verdade (IOT) — tendência a julgar afirmações repetidas como mais verdadeiras — é semelhante em L1 e L2, a Ilusão de Falsidade (IOF) — tendência a considerar contradições como mais falsas — tem sido pouco estudada. Não se investigou, em particular, o impacto da troca de língua entre as fases de exposição e reexposição, nem o papel da proficiência em L2 na IOF.

Participaram no estudo 130 falantes nativos de português (L1), proficientes em inglês (L2), distribuídos aleatoriamente por duas condições: L1-L2 ou L2-L1. Na fase de exposição, leram 30 afirmações ambíguas (verdadeiras e falsas) em L1 ou L2. Na reexposição, avaliaram 30 contradições dessas afirmações e 30 novas quanto à sua veracidade. A IOF foi replicada em contexto bílingue, confirmando a robustez do efeito. A sua magnitude não foi influenciada pelo switching da língua nem

pela proficiência em L2. Contudo, o efeito foi ligeiramente maior na condição L1-L2, sugerindo que a mudança da língua nativa para a não nativa, entre a exposição e a reexposição, pode intensificar a percepção de falsidade. Os resultados demonstram que a IOF se estende a contextos bilíngues e que a fluência de processamento associada à língua influencia os julgamentos de verdade de informação contraditória.

10h20 | **Sessão de Pósteres B & Pausa Para Café | Poster Session B & Coffee Break**

Consulte na página 36 os resumos dos posters da Sessão B

SESSÃO 7 | SESSION 7**11h20 | Subliminal Beauty Engages the Brain's Valuation Circuits**

Patrícia Fernandes, Joseph W. Kable, Jorge Almeida, Anita Tusche, Christian C. Ruff, & Fredrik Bergström

Queen's University, Canada / University of Coimbra, Portugal

Neuroeconomic models propose that the anterior ventral striatum (aVS) and ventromedial prefrontal cortex (vmPFC) are key regions for computing subjective value (SV) signals that guide choice. However, the role of conscious awareness in this process remains debated. Here we examined whether SV can be automatically computed in these regions without conscious awareness. In an fMRI experiment, participants viewed faces that varied in attractiveness under three conditions: (i) suppressed from awareness via continuous flash suppression (CFS), (ii) clearly visible without suppression, or (iii) absent (background only) with CFS. Participants reported trial-wise facial identity (objective) and visibility (subjective) measures of facial awareness. In a post-fMRI session, they rated the attractiveness of each face as a measure of SV. When faces were seen, task performance (d') exceeded chance and responses were faster than in absent trials. When faces were unseen, performance was at chance but responses were slower than absent trials. Neurally, seen and unseen faces elicited greater neural signal than absent trials and showed similar neural patterns in the fusiform face area (FFA). Critically, neural signal in vmPFC correlated with SV for both seen and unseen faces, with similar neural patterns. In aVS, SV-related signal was only observed for unseen faces. Furthermore, mean face-related signal in FFA correlated with SV-related signals in aVS and vmPFC for unseen faces. These findings demonstrate that SV can be automatically computed in aVS and vmPFC without conscious awareness, suggesting a neural pathway by which subliminal information can influence value-based choice.

11h40 | Population Receptive Field Sizes in Primary Visual Cortex Depend on Colour Direction

Rebecca Lowndes, Lauren Welbourne, & Antony Morland

University of Coimbra

Spatial sensitivity of the human visual system is higher for luminance stimuli than for stimuli in the chromatic isoluminant plane, with higher sensitivity to L-M than S-cone stimuli. From this, early models have assumed that neurons coding isoluminant chromatic patterns should have, on average, a larger receptive field size than neurons sensitive to achromatic patterns. Surprisingly, previous work has found no difference in population receptive field (pRF) sizes in different chromaticity conditions. We have reinvestigated this claim using a Random Luminance Modulating (RLM) background, previously shown to reduce the effect of luminance artefacts. Additionally, we have carefully defined ROIs to allow for repeated measures testing. In five participants, we measured pRF sizes in V1 at 2-4 degrees of visual angle using achromatic, L-M and S cone drifting bars. We found that pRF sizes were significantly larger in S-cone conditions than L-M and achromatic conditions, consistent with the lower spatial sensitivity of this chromatic direction. There was no significant difference in pRF sizes between L-M and achromatic conditions. Our results show that stimulus characteristics change the pRF sizes measured, in a way that is consistent with stimulus sensitivities.

12h00 | Selective Encoding of Mid-Level Visual Dimensions in Human Ventrotemporal Cortex

Zohar Tal, Stephanie Kristensen, Alessio Fracasso, & Jorge Almeida

University of Coimbra

Perceiving and recognizing the rich variety of objects around us relies on the brain's ability to extract and integrate multiple levels of visual information, from low-level features to high-level categorical representations. Mid-level visual dimensions, such as surface material and shape, play a crucial role in this hierarchical processing. Yet, compared to low- and high-level representations, the cortical mechanisms supporting mid-level dimensions remain underexplored. We used a one-dimensional population receptive field (1D-pRF) modeling approach to investigate cortical tuning to 2 object-related dimensions derived from perceptual similarity judgments: Visual-dimension 1 (VD1, surface material) and Visual-dimension 2 (VD2, shape). Participants viewed sequences of objects ordered along VD1 or VD2 during separate fMRI sessions. For each voxel, we estimated preferred tuning location (preferred value) and width (tuning range) using 1D Gaussian models. The models revealed robust and distinct tuning profiles across retinotopically-defined visual regions, with differences in variance explained and tuning width. Crucially, we observed consistent and selective tuning for VD1 in ventrotemporal cortex (VOT), beyond standard retinotopic areas. Cross-validation showed that this tuning could not be explained by low-level retinotopic organization. Notably, VD1 tuning maps in VOT showed a consistent spatial layout across participants, suggesting an orderly, possibly topographic, representation. These findings advance our understanding of mid-level object representation and demonstrate the utility of pRF modeling in revealing fine-grained neural encoding of non-spatial visual feature.

CONFERÊNCIA PRÊMIO APPE | APPE PRIZE CONFERENCE**12h30 | Externalizing Forgetting: Delay Testing in a Long Operant Chamber***Catarina Soares*

To study animals' ability to behave according to time-related cues (i.e., perform temporal discriminations), the symbolic matching-to-sample task has been widely used. In this task, animals choose between two options (i.e., the comparisons) according to the duration of a previously presented stimulus (i.e., the sample). A variation of this task in which a delay is introduced between the sample and the comparisons—the delayed symbolic matching-to-sample—has been extensively used to study animal memory given that to respond correctly animals need to retain information during the delay. Yet, choice biases have been reported and, while some authors attributed them to a memory-related process, others do not. To clarify the effects of inserting a delay following a temporal discrimination, we conducted a series of experiments with pigeons in a long operant chamber. This chamber allows bridging hypothetical internal events, for instance, temporal estimation and sample memories, to external events, pigeons' movements. The location where trials started and where each comparison was presented varied across experiments. Results showed that as the delay increased, accuracy decreased and pigeons tended to move toward the middle of the chamber, irrespective of what that location was associated with. Inserting a delay seems to lead to a disruption where stimulus control by the sample was reduced and replaced by control by the location at the moment of choice. To test whether this disruption resulted from the novelty of the delay, two additional experiments were conducted in which the delay was present since the beginning and, its duration was simply decreased or increased during testing. Results remained similar which is not consistent with the novelty hypothesis.

PÓSTERES SESSÃO A | POSTER SESSION A

1. "Pop-up, Logo Existo": O Efeito da Carga Cognitiva na Retenção de Informação em Ambientes Digitais: Um Estudo Experimental

Maria Eduarda Soares (1), Ana Beatriz Costa (1), Ana Bártole (1,2), Sara M. Fernandes (1,2), & Pedro F. S. Rodrigues (1,2)

1) Departamento de Psicologia e Educação, Universidade Portucalense 2) RISE-Health@UPT, Universidade Portucalense

O crescimento exponencial do uso de smartphones e a constante conectividade digital têm transformado os hábitos cognitivos, especialmente entre os jovens. Esta evolução tecnológica introduz elementos de design e notificações que podem gerar uma carga cognitiva indesejada, afetando a gestão dos recursos mentais e a memória de trabalho. O presente projeto pretende investigar o impacto de distratores visuais dinâmicos (notificações pop-up) na retenção de informação em ambientes digitais. O estudo adota uma metodologia experimental de desenho intra-sujeitos, incidindo sobre uma amostra de estudantes universitários com idades compreendidas entre os 18 e os 30 anos. O protocolo experimental consiste na exposição a narrativas em formato teleponto sob duas condições contrabalanceadas: uma condição com ausência de distratores e uma condição com a presença de notificações dinâmicas previamente validadas num estudo-piloto. O objetivo geral deste projeto é comparar o desempenho da memória em ambientes de alta e baixa carga perceptiva, explorando o papel moderador de variáveis individuais. Espera-se que a recuperação de informação seja afetada no ambiente digital com elevada carga perceptiva (ambiente com notificações) e que este efeito seja moderado por variáveis individuais como a capacidade de memória de trabalho. Espera-se ainda que os resultados contribuam para a compreensão de como as interrupções digitais dinâmicas, comuns no quotidiano, interferem nos processos de retenção de informação.

2. ALiTTA: Reproducible, Local, Auditable Linear Translation for Agent-Based Research

Vinicius Canonici; Giovanni Faissola; Larissa Casteliani; Joana Arantes; Ana Paula Soares

U. Minho; U. Federal do Paraná; U. Kyoto; U. Minho; U. Minho

As translation becomes a routine layer of everyday communication, often mediated by automatic tools, the underlying process remains cognitively complex: human translation involves meaning construction, contextual inference, and continual monitoring of semantic equivalence. In production settings, however, machine translation is increasingly used as a subroutine inside agent-based systems (retrieval, tool use, and user interaction), where two practical constraints dominate: (i) translation quality must be monitored without expensive human references; and (ii) executions must be auditable and reproducible. Here we introduce ALiTTA (Auditable Linear Translation Tool for Agents), a translation tool exposed via the Model Context Protocol that implements a deterministic three-stage pipeline (source text→translation→back-translation). As a reference-free quality signal, the system returns the semantic (cosine) similarity between embeddings of the original text and the back-translation and logs each request in an auditable JSONL trail. Translation runs locally using Tencent HY-MT1.5-7B-GPT with fixed decoding hyperparameters, enabling more repeatable outputs under controlled conditions. To probe interpretability and cross-linguistic robustness, we run an exploratory, item-level human calibration with one rater per language (European Portuguese, Brazilian Portuguese, Japanese). For each of 100 short English sentences, raters provide adequacy and fluency judgements (Likert), plus response time and confidence. We quantify human–metric alignment via rank correlations (with bootstrap CIs over items), and we report a simple acceptability calibration using a thresholded criterion. Cross-linguistic analyses compare judgement distributions, the stability of human–metric coupling across

languages, and shared difficult items. Finally, we assess robustness through convergent-metrics benchmarking, contrasting the back-translation embedding signal with alternative reference-free similarity/QE measures.

3. Attitudes, Motivations, and Tolerance Toward Infidelity: A Cross-Cultural Comparison Between Brazil and Portugal

*Walentina Braga de Lira, Micheline Maria Faheina Saraiva, Lucileia José de Sousa Aranha Oliveira e Joana Arantes
Universidade do Minho*

A infidelidade constitui um fenómeno relacional complexo, influenciado por fatores psicológicos, relacionais e culturais. Estudos recentes demonstram que atitudes face à infidelidade variam significativamente de acordo com normas sociais, estilos de vinculação e perceções individuais sobre compromisso e exclusividade nas relações amorosas. Além disso, diferentes culturas podem apresentar interpretações distintas sobre o que constitui infidelidade e sobre as circunstâncias em que este comportamento é considerado mais ou menos aceitável. Investigações anteriores sugerem ainda que fatores como satisfação relacional, investimento no relacionamento e características de personalidade podem influenciar a probabilidade de envolvimento extradiádico (Mark, Janssen & Milhausen, 2011; Fincham & May, 2017). O presente estudo tem como objetivo investigar atitudes, motivações e níveis de tolerância à infidelidade em participantes brasileiros e portugueses, procurando identificar possíveis diferenças culturais entre os dois contextos. A investigação baseia-se em instrumentos psicométricos validados, incluindo a Escala de Infidelidade Sexual e Emocional (Pinto & Arantes, 2017), a Escala de Tolerância à Infidelidade (Domingues et al., 2017) e a Escala de Motivações para Infidelidade (Barta & Kiene, 2005; Leones & Souto, 2016). A recolha de dados será realizada online através da plataforma Qualtrics e envolverá participantes adultos (≥ 18 anos) de nacionalidade brasileira ou portuguesa. Pretende-se compreender de que forma fatores sociodemográficos, estilos de vinculação e normas culturais influenciam a perceção e as atitudes perante comportamentos de infidelidade. Espera-se que os resultados contribuam para uma melhor compreensão das dinâmicas contemporâneas das relações amorosas e das diferenças culturais na interpretação da infidelidade em contextos lusófonos, ampliando o conhecimento sobre fatores psicológicos associados à ocorrência e tolerância deste fenómeno.

4. Attentional Control Under Digital Interference: The Role of Smartphone Use Patterns

*Mariana da Silva Pacheco
Universidade do Minho*

The articulation between digital interference and executive control processes remains insufficiently explored from an experimental perspective, particularly regarding the role of individual differences in smartphone use patterns. Understanding whether susceptibility to digital interference varies as a function of these differences represents an important step toward clarifying the mechanisms underlying cognitive performance in digitally mediated contexts. Participants are students from the University of Minho, recruited through online dissemination. Smartphone use patterns were previously assessed using the Smartphone Addiction Inventory (SPAI), validated for the Portuguese population. Based on the distribution of scores, participants were classified according to the lower and upper quartiles, allowing comparison between contrasting levels of smartphone use in the primary analysis. Performance is being assessed through a computerized task implemented in SuperLab and administered in a controlled laboratory setting under two experimental conditions (neutral vs. digital interference), constituting a mixed design with one between-subjects factor (level of smartphone use) and one within-subjects factor (experimental condition). Dependent variables include reaction time and

response accuracy. The findings are expected to clarify whether digital interference differentially affects performance as a function of smartphone use patterns, providing experimental evidence regarding the modulation of cognitive processes by individual factors in technologically mediated environments.

5. Background Music, Emotional Regulation, and Working Memory: Evidence From Behavioral and Pupillometry Measures

Elena G Candau, Julia Morales, Pedro B Albuquerque, & Luis Morales

Universidad Loyola Andalucía

Listening to background music (BM) during cognitively demanding tasks is common, yet its effects on cognitive performance remain unclear. This study examined whether simultaneous BM listening modulated working memory (WM) updating, sustained attention, emotional response, and cognitive load. Eighty-four young adults were randomly assigned to a music or silence condition (between-subjects). Participants completed an N-back task (0-, 1-, 2-, and 3-back) as a measure of updating, while pupil diameter and blink rate were recorded to control for cognitive load and sustained attention respectively. In addition, sustained attention was assessed using the Psychomotor Vigilance Task (PVT) and the Sustained Attention to Response Task (SART), and WM capacity was measured with the Backward Digit Span. Emotional valence and arousal were measured pre- and post-task using the Self-Assessment Manikin (SAM), and individual differences in music-related emotional regulation were assessed with the Barcelona Music Reward Questionnaire (BMRQ). BM increased arousal but did not affect valence, with effects primarily observed in individuals reporting higher emotional regulation through music. In the N-back task, BM enhanced updating performance (d'), particularly at the 1-back level. No differences emerged in backward digit span or sustained attention tasks. Pupillometry did not reveal condition differences in overall pupil size, although blink rate increased with task difficulty. These findings suggest that simultaneous BM may facilitate WM updating under moderate cognitive load without systematically affecting sustained attention or physiological indices of cognitive effort.

6. Blurry Drinks: Effects of Memory Inhibition on Perceptual Identification of Alcohol Cues

Lucas Saldanha¹, Anabela Carvalho¹, Alberto Crego¹, Eduardo López-Caneda^{1,2}

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Alcohol is the most commonly consumed psychoactive substance worldwide. Over one fifth of youth engages in binge drinking – a pattern of episodic excessive alcohol consumption –, associated with increased reactivity to alcohol cues and neurofunctional anomalies linked to inhibitory control (IC), potentially increasing vulnerability for future problematic consumption. A key subtype of IC is memory inhibition (MI) – the voluntary suppression of unwanted thoughts or memories. Experimental work indicates that MI can reduce accessibility to previously encoded content and modulate its perceptual and attentional responses, providing a useful framework to examine whether suppressing alcohol-related memories could influence downstream cue-driven processes central to alcohol cue reactivity. In the present study, we behaviourally validate the Think/No-Think Alcohol-Priming (TNTA-P) task by examining whether MI over alcohol-related material influences subsequent processing of alcohol cues in a sample of 32 university students. Participants learned associations of neutral and beverage-related stimuli, followed by repeated retrieval (Think) or suppression (No-Think) of the

beverage image. Memory was assessed through recall and identification during a de-pixelation procedure, with performance compared to baseline (learned but neither retrieved nor suppressed) and unprimed (novel and previously unseen) stimuli. Suppressed (No-Think) images showed a weaker priming effect, reflected in slower and more effortful identification compared with the Think and Baseline conditions. Additionally, previously presented stimuli elicited faster reaction times than unprimed stimuli. Although preliminary, these findings support the TNTA-P task's behavioural validity and highlight its potential for studying MI processes relevant to alcohol-related cognitive biases, with potential applications in cognitive training interventions.

7. Bom Partido: A Influência da Identidade Política na Avaliação da Atratividade Física

João Pedro Matos, Fábio Morais, Diogo Reis, Rafael Palma, & Joana Arantes

Universidade do Minho

A literatura aponta para uma preferência clara por interagirmos e cooperarmos com pessoas que possuem visões políticas semelhantes (homofilia política) e evitarmos aquelas com visões distintas das nossas. O presente estudo teve como objetivo analisar de que forma a identidade política influencia a avaliação da atratividade física. Dezassete jovens adultos portugueses (19-27 anos) participaram em três tarefas experimentais nas quais: (1) avaliaram a atratividade física de deputados políticos após a apresentação inconsciente (priming subliminar) e (2) consciente (priming supraliminar) do partido destes; e (3) atribuíram uma posição no espectro político a deputados pouco, medianamente e muito atraentes. Os resultados revelaram uma correlação negativa entre a dissimilaridade política e a atratividade física, mas apenas na condição supraliminar: quanto maior a distância partidária, mais desfavorável a avaliação. Contrariamente ao esperado, foram os participantes com menor interesse político que evidenciaram maior sensibilidade a este efeito. Na terceira tarefa, observou-se uma diminuição da distância percebida no espectro político para deputados considerados mais atraentes. Em conjunto, os resultados deste estudo reforçam empiricamente a visão de que "os opostos não se atraem", demonstrando que a semelhança ideológica (em particular a identidade partidária) molda de forma significativa a percepção da atratividade física quando esta informação é conscientemente acessível. Por sua vez, a atratividade, longe de ser um julgamento puramente estético, emerge como um marcador social imbuído de significado político e moral, funcionando simultaneamente como consequência e motor da homofilia política. Limitações do estudo, recomendações futuras e implicações práticas são discutidas.

8. Bridging Statistical and Prosodic Cues: Neural Correlates of Speech Segmentation

Rodrigues, A. C., Vasconcelos, M. & Soares, A. P.

Escola de Psicologia da Universidade do Minho

While word segmentation in continuous speech relies on multiple cues, research has focused mainly on statistical information, overlooking evidence that prosody, including pitch and lexical stress, supports boundary detection. This study investigated, for the first time, the role of variable prosodic cues in speech segmentation within a statistical learning paradigm by keeping transitional probabilities (TPs) constant while manipulating pitch contours to approximate native European Portuguese prosody, a language in which lexical stress typically falls on the penultimate or final syllable, making it well suited to examine interactions between prosodic variability and statistical cues. Thirty university students listened to three speech streams in a within subject design: flat (TPs only, as baseline), fixed (pitch on the middle syllable), and variable (pitch either on the middle or final syllable). Learning was assessed using a lexical decision task (Signal Detection

Theory; response times). EEG analyses focused on the N100 and P200 components. Behaviorally, discrimination was higher in the variable pitch condition, whereas responses were slower in the flat condition. Neurally, the N100 triplet onset effect was observed only in pitch streams and decreased over time in the fixed condition. P200 amplitudes were larger in pitch conditions, particularly for final syllables, consistent with enhanced grouping into meaningful units. Together, these findings indicate that combining TPs with variable prosodic cues enhances speech segmentation, potentially by increasing stimulus entropy in a way that guides attention and strengthens statistical learning.

9. Can a Warning Mitigate the Cross-Race Effect?

Inês Sousa, Raquel Pinto, & Pedro B. Albuquerque

Universidade do Minho

Eyewitness identification can be extremely helpful in both convictions and acquittals. Yet, it has also been proven that it can be flawed and lead to the conviction of innocent people. Many factors can influence the accuracy of facial recognition, including the Cross-Race Effect (CRE), a phenomenon in which individuals are less accurate at recognizing cross-race faces than their own-race faces. Given its impact in the forensic field, it is important to investigate ways to mitigate it. To this end, we conducted two experiments in which White participants, divided into two groups (control and experimental), completed a standard recognition task in which they were presented with faces of different races (i.e., White, Black, Asian, Latine). In Experiment 1, before the encoding phase (i.e., face presentations), participants in the experimental group were given a warning about the impact of the CRE in face recognition asking them to pay special attention to faces of races different from their own (pre-encoding warning); in Experiment 2, participants in the experimental group received the warning before the recognition task (pre-recognition warning). Results showed that a pre-encoding warning improved recognition. It also eliminated the CRE for Black faces. Pre-recognition warning only eliminated the CRE for Latine faces. Given the real-life impact of the CRE, it is essential to keep investigating this matter.

10. Chronotype, Emotional Regulation and Working Memory: A Correlational and Experimental Approach

Inês B. Oliveira, Bruno Cunha, Pedro B. Albuquerque & Pedro F. S. Rodrigues

Universidade Portucalense Infante D. Henrique

Working memory (WM) is a central system for the temporary maintenance and updating of information, which can be influenced by both biological and emotional factors. At the biological level, circadian typology (chronotype) stands out, as well as the effects of synchrony/asynchrony between time of day and biological rhythm. However, cognitive performance is not explained exclusively by circadian variables, and it could be important to consider emotional processes, namely emotional regulation (ER) and psychological distress (anxiety, depression, and stress). This research analyzed the interaction among biological (chronotype and time of day), emotional (ER strategies and difficulties and distress) and cognitive (WM capacity) factors in a sample of university students across two complementary studies. Study 1 (N = 345) - correlational - tested a mediation model between cognitive ER strategies, ER difficulties and distress, examining the invariance across chronotypes. The findings confirmed the mediating role of ER difficulties, with structural invariance across chronotypes. Study 2 (N = 57) - quasi-experimental - assessed performance on an Operation Span Task manipulated with positive, negative and neutral valence stimuli, administered at synchronous and asynchronous times. No significant effects of chronotype, time of day or emotional valence were found. Overall, the findings suggest that the mechanisms between cognition and emotion could remain stable across chronotypes, with no evidence of differential effects of circadian

synchrony on WM. These results contribute to a more integrated understanding of the relationship between biological, emotional, and cognitive factors in an academic context.

11. Creative Minds at Work: Oscillations Signature of Associative and Dissociative Thinking

Ennahli, Khaoula; Souza, Cristiane & Garrido, Margarida Vaz

Instituto Universitário de Lisboa (ISCTE)

Creative cognition arises from the interaction between fast associative processes and slower controlled mechanisms, supported by large-scale brain networks. The Default Mode Network underpins spontaneous thought and memory-based associative ideation, whereas the Executive Control Network supports top-down regulation and the suppression of automatic associations. Although associative creativity primarily engages the DMN and dissociative creativity is thought to rely more on executive control, these systems dynamically interact depending on task demands and creative stages.

Electroencephalography research has linked alpha and theta oscillations to divergent thinking, remote association, and improvisation. However, the neural dynamics distinguishing associative and dissociative creative processes remain unclear. This study investigated the dynamic engagement of memory and control systems during creative ideation using EEG. Forty-five participants viewed normalized paintings depicting people, places, and objects and generated three-word chains under three conditions: associative, dissociative, and baseline (passive viewing). Behavioral performance and response times were recorded alongside EEG data. We hypothesized that associative processing would show increased alpha power (8–12 Hz) over posterior and fronto-medial regions, reflecting greater DMN involvement and conceptual access. Dissociative processing was expected to elicit increased frontal-midline theta power (4–7 Hz), indicating stronger ECN engagement for top-down control and episodic retrieval. EEG signals were analyzed using time–frequency decomposition with Morlet wavelets to examine alpha and theta power across regions and conditions. By characterizing oscillatory dynamics underlying associative and dissociative ideation, this study advances understanding of how memory and control systems interact to support creative cognition.

12. Do Prompts Work? Experimental Insights Into Metacognitive Support in Digital Learning

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The rapid expansion of digital learning environments has increased students' responsibility for managing their learning, underscoring the central role of Self-Regulated Learning (SRL). Metacognitive prompts have been proposed as an instructional mechanism to trigger core SRL processes—planning, monitoring, and reflection. However, empirical evidence regarding their effectiveness remains mixed, highlighting the need for controlled designs that systematically test boundary conditions and moderating variables. The present project employs a quasi-experimental, within-subjects design to examine the causal impact of metacognitive prompts on information retrieval in a digital context. University students (≥ 18 YO) complete two multimedia learning sessions (approximately 10 minutes each) covering the same topic but containing non-overlapping content. In the experimental condition, metacognitive prompts are embedded at three theoretically defined phases aligned with Zimmerman's SRL model: (1) pre-task planning prompts, (2) mid-task monitoring prompts, and (3) post-task reflection prompts. In the control condition, the video is presented without prompts. Condition order and video sequence are counterbalanced to control for order and learning effects. Immediately following each session, participants

complete parallel multiple-choice knowledge tests assessing memory performance. Individual differences in self-efficacy, metacognitive learning strategies, and metamemory are assessed using validated self-report measures and examined as moderators of the prompt–performance relationship. By experimentally manipulating prompt presence within participants while controlling task order, this project aims to determine whether metacognitive prompts enhance learning and to identify the individual conditions under which their effects are strengthened or attenuated, contributing to experimental research on SRL in digital learning environments.

13. Does Attention Drive the Animacy Effect in Free Recall? Evidence From Pure and Mixed Lists

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People tend to remember animate beings (e.g., "dog") better than inanimate objects (e.g., "spoon"), a robust phenomenon known as the "animacy effect". This effect has been replicated across languages, age groups, and memory tasks, yet its underlying cognitive mechanisms remain unclear. One possible hypothesis relies on attention prioritization, which proposes that animates capture attention faster and more automatically, leading to superior recall. This account predicts that the animacy effect should be stronger in mixed lists (i.e., when participants encode animate and inanimate words within the same list), where animate items compete directly with inanimate ones for attentional resources. In contrast, the effect should be reduced or absent in pure lists (lists composed of only animate or only inanimate words), where such competition is minimized. Prior studies examining the animacy effect on free recall using pure vs. mixed lists have produced conflicting results (Komar et al., 2023; Popp & Serra, 2016). To clarify these findings, we are conducting a preregistered experiment (N=146). Participants are randomly assigned to either a pure-list or mixed-list condition (between-subjects). In both conditions they study two lists of 16 words each followed by a distractor and the corresponding free recall task. Importantly, in the pure-list condition, each list includes only animate or inanimate items (within-subjects; counterbalanced), whereas in the mixed condition, lists include both item types (8animates + 8 inanimates). Following the attention prioritization hypothesis, a significant Animacy X List Type interaction is expected, denoting a significant animacy advantage in mixed-lists, but not (or reduced) in pure-lists.

14. Easy to Remember, Hard to Trust: Memorability Reduces Perceived Security in Passwords

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Previous research has shown that people tend to consider easy-to-remember passwords as weaker and difficult-to-remember passwords as more secure, even when this perception is not aligned with objective security. However, it remains unclear whether this effect is driven by perceived memorability itself or by linguistic factors such as semantics. The present study examined the relationship between perceived memorability, perceived security, and password use using materials with and without semantic content while maintaining objective security. A total of 168 university students participated in a within-subjects design with four password types: words (e.g., resucitado), memorable pseudowords (e.g., lalalilolu), non-memorable pseudowords (e.g., nelifuposa), and passwords with upper case, lower case, numbers, and special characters (e.g., A(?5<qW{m). All password types have similar objective security. For each password, participants rated perceived memorability, perceived security, and likelihood of use for important (e.g., online banking) and unimportant (e.g., news site)

online services, followed by an incidental recall task. In general, the results showed that memorable pseudowords and words were perceived as most memorable and the least secure of all the passwords. These results suggest that perceived memorability negatively influences perceived security independently of semantic content. Regarding usage, special-character passwords were preferred for important services, whereas memorable passwords were preferred for unimportant services. Recall performance was highest for memorable pseudowords and words and lowest for non-memorable pseudowords and special-character passwords. These findings suggest that metacognitive beliefs about memorability influence password selection and suggest a way to generate easy-to-remember passwords that could also be secure.

15. Enforcing Category-Based Retrieval to Amplify the Testing Effect for Unrelated Word Lists

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Universidade do Minho

Retrieval practice reliably enhances long-term retention relative to repeated study, a phenomenon known as the testing effect. Evidence suggests that this benefit may be partly mediated by enhanced organizational processing during retrieval. In a previous study, we introduced a Category Clustering Recall (CCR) strategy during retrieval practice, encouraging participants to make an effort to practice recovery in groups by categories. Results showed that encouraging semantic organization potentiated the testing effect for categorized word lists. However, results for non-categorized lists were less conclusive. With unrelated word lists, it was not possible to compute clustering indices (e.g., Adjusted Ratio of Clustering) to verify whether participants were effectively engaging in the instructed semantic clustering, limiting our ability to confirm adherence to the CCR strategy. The present study will address this limitation by modifying the retrieval practice procedure to enforce category-based recall. In a two-session online experiment, 200 participants will study a single list of 48 unrelated words. Participants will be randomly assigned to one of five practice conditions: CCR with self-generated cues, CCR with other-generated cues, free recall, restudy, or no practice. During CCR practice, participants will be required to recall words explicitly within (self-generated or provided) categories, ensuring active engagement in organizational processing. Final memory performance will be assessed after a 48-hour delay. We hypothesize that enforced self-generated category retrieval will produce superior long-term recall compared to all other practice conditions, as self-generated categories are expected to create more distinctive, elaborative, and idiosyncratic retrieval cues than externally provided or other-generated cues.

16. From Action to Perception: Onset Repulsion Effect as a Reflection of Embodied Expectations

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Universidade de Aveiro

The Onset Repulsion Effect (ORE) describes the systematic backward displacement of a moving target's perceived onset position, opposite to its motion direction. This effect is particularly pronounced for ascending targets, reflecting a vertical anisotropy in spatial localization. Previous research has shown that the ORE is influenced by perceived mass, with targets judged as heavier producing larger backward displacements. These outcomes suggest that the ORE may reflect a cognitive tendency to attribute a "natural history" to dynamic events, similar to the preparatory windup before throwing an object, leading to a backward overcompensation of onset location. This study aimed to further explore this interpretation of ORE. Participants first performed a preliminary task involving the individual handling of two plastic balls separately. There was a heavy ball and one light, distinguished by colour (blue and red). In the Blue Experimental Group, the heavy ball was blue, and the light ball was red, whereas, in the Red Experimental Group, the colour weight association was reversed. Each

participant threw both balls upward, one at a time, and was encouraged to freely interact with them until they developed a clear sense of the difference in mass and the associated movement dynamics. Afterwards, all participants performed a spatial localization task in which they were required to indicate the onset location of targets moving along one of sixteen possible trajectories. The targets were visually identical to the balls used in the preliminary task. Results revealed that, in both groups, the ORE was significantly increased for the ball colour coded as heavier. This finding suggests that the ORE is shaped by expectations grounded in embodied experience, highlighting how sensorimotor interactions influence perceptual localization and providing empirical support for accounts of embodied cognition.

17. From Marginalisation to Violent Collective Action: The Moderating Role of Deprivation Salience and Perceived Group Efficacy

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Centro de Investigação em Psicologia da Universidade do Minho

Literature on collective action has increasingly examined the psychological conditions that foster support for violent responses to perceived social disadvantage. Grounded in contemporary models of collective action, such as the Social Identity Model of Collective Action, this study examined whether perceived group marginalisation mediates the association between group identification and support for violent collective action, and whether deprivation salience conditions this process. Using a quasi-experimental design ($N = 144$ emerging adults; $M_{age} = 20.20$, $SD_{age} = 2.07$), participants were exposed to a vignette manipulating deprivation salience (social crisis vs. neutral lecture context). Measures assessed group identification, perceived marginalisation, perceived group efficacy, and support for violent collective action. Results indicated that deprivation salience did not directly increase endorsement of violent collective action. Instead, stronger group identification under conditions of deprivation salience predicted heightened perceptions of marginalisation, suggesting that contextual cues of disadvantage amplify the psychological relevance of group membership and exclusion. Perceived marginalisation subsequently functioned as a proximal predictor of support for violent collective action. Furthermore, a moderated mediation pattern revealed that the link between perceived marginalisation and violent collective action was stronger when participants believed their group was effective in achieving social change, highlighting efficacy as a strategic belief that conditions the translation of grievance into action. These findings advance understanding of the psychological pathways underlying support for violent collective responses and underscore the importance of addressing perceptions of exclusion and strategic efficacy within models of collective mobilisation.

18. "Reaching for the stars": The Action-Sentence Compatibility Effect on Vertical Metaphorical Expressions

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Conceptual metaphors (CMs), as mechanisms that convey abstract concepts through concrete notions (e.g., GOOD IS UP), are present in everyday language as metaphorical expressions (e.g., "high expectations"). According to embodied cognition theories, understanding these mechanisms is rooted in sensorimotor systems and bodily engagement, with recent research showing that, even when used implicitly, these play a significant role in cognition, influencing thought and behaviour. Nonetheless, experimental studies on CMs are often conducted using inorganic language (i.e., CMs in "A is B" formal format; e.g., POWER IS UP) that disregards their presence in everyday speech (e.g., "your royal highness"); and using

minimally controlled stimuli regarding psycholinguistic and affective variables known to affect abstract language processing (e.g., familiarity, valence, and arousal). In this study, we introduce an action-sentence compatibility task where participants were presented with a controlled set of vertical metaphorical expressions varying in embodiment (from highly embodied to highly disembodied, as established in a previous normative study), and in directionality (invoking upward vs. downward spatial orientations, e.g., "high prices" vs. "down the drain", respectively), while being controlled for familiarity, concreteness, valence, arousal, and transparency. Participants were asked to judge whether each expression "made sense" by pressing a response key positioned either congruently or incongruently with the expression's invoked verticality. Hence, we have attempted to replicate the action-sentence compatibility effect previously reported in literal language, applying it to abstract language by using metaphorical expressions (to replace the commonly used CM models) and thus striving to introduce organic language in this area of research.

19. Hens and Pigeons: Are Choice Biases Similar Between Species?

Beatriz Gomes, Catarina Soares & Carlos Pinto

University of Minho

To study memory for event durations, animals were trained to choose between two colored options as a function of a stimulus duration (matching-to-sample task). If the stimulus is presented for 3 s the animal learns to choose the red option, if it is presented for 9 s they learn to choose the green option. After successfully learning this discrimination, a delay is introduced between stimulus and choice, forcing the animals to retain some kind of information to choose the correct option. In variations of this procedure, manipulating delays and inter-trial intervals, pigeons have shown a bias for choosing the option associated with the shorter stimulus, a bias known as the choose-short effect. Evidence suggests that this choice bias is likely due to task-related confounds rather than a memory-related effect. However, little is known about how other species behave in this task. We conducted two experiments in which pigeons and hens learned a matching-to sample task without inter-trial intervals. Following training, the animals underwent a memory test with new delay durations, which were illuminated or spent in darkness. Results were similar for both species: the choose-short effect was observed only when delays were illuminated; when delays were spent in darkness, general accuracy decreased towards indifference as the delay increased. Our results show that different bird species behave similarly in this task.

20. Giving Mental Illness a Face: Consensual Prototypes and the Emergence of Unlabeled Stigma

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Stigmatization of mental illness (MI) is often framed as a top-down process triggered by category labels. Our prior work showed that MI labels bias trait inferences from neutral faces mainly when perceivers report higher label–face fit. Here, we test whether stereotypes shape consensual facial prototypes of MI (Phase 1) and whether these prototypes elicit stigma without labels (Phase 2). Phase 1 used brief reverse correlation to derive group-level classification images (CIs) of MI vs mental health (MH; Study 1) and of depression and schizophrenia vs MH (Study 2), separately for female and male faces. In Phase 2, independent raters evaluated each unlabeled CI on warmth, competence, trustworthiness, dominance, threat-related traits, dehumanization (animalistic, mechanistic), and perceived MI. Across studies, label-consistent trait content was inferred directly from the faces. MI prototypes were rated as more mentally ill, less human, and more negative than MH, with larger penalties in warmth than competence, lower trustworthiness, and higher threat-related attributions. Gender

effects were small, with slightly harsher ratings for female prototypes on a limited set of traits. In Study 2, MH was evaluated most positively, less mentally ill and animalistic, and more feminine; schizophrenia was judged more threatening and more autonomous than depression. Condition x gender interactions were rare, suggesting sharper differentiation for male faces on a small subset of traits. Overall, consensual visual representations of MI already embed stigma-congruent judgments, supporting a bidirectional model in which internalized facial prototypes and labels jointly shape impressions of mental health.

21. Grasping at the Organization of Object Knowledge: Testing Different Object-related Dimensions as Organizational Principles of Ventral Temporal Cortex

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In our daily lives we encounter a myriad of things with which we might need to interact as we navigate our environment. Mental representations of these things must be computed and stored in our brains to be manipulated to support cognition. How are such representations organized in the brain? Several proposals have been put forth on what the principles of organization of object information in the brain might be: within ventral temporal cortex – regions thought to support object recognition – possible dimensions include the animacy status of target stimuli, their real size, their texture and material properties, and potentially their graspable status, amongst others. Here, we used functional magnetic resonance imaging (fMRI) and multivariate approaches (SVM decoding, RSA) to discriminate patterns of activation for different categories of objects to test the role of these dimensions as organizing principles of object information in the brain. We show that pattern discriminability between different categories of objects does not seem to follow differences in their animacy status in any continuous way. Moreover, graspability of the target stimuli and their haptic texture properties are better predictors of representational content within ventral temporal cortex than animacy and real size. These results are in line with recent studies demonstrating the importance of computational contingencies superimposed by bi-directional functional coupling between parietal regions dedicated to the processing of object manipulation and grasping and ventral temporal regions responsible for object recognition, potentially involving material and texture processing.

22. A Visualização de Vídeos Curtos e Longos Influencia a Percepção Temporal?

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Com a emergência do conteúdo de formato curto nas redes sociais, surge uma preocupação para perceber qual o seu impacto na distorção da percepção temporal. Este estudo tem como objetivo procurar clarificar qual a diferença na percepção temporal entre vídeos de formato curto e longo, visto que a literatura compara apenas vídeos de formato curto com tarefas não audiovisuais, como a leitura. Assim, hipotetizamos que a visualização de vídeos curtos resultará numa subestimação da percepção temporal, em comparação com a visualização de vídeos longos, quando ambas as tarefas têm duração equivalente. A partir de uma amostra de 34 participantes, alocou-se cada um, aleatoriamente, a uma de duas condições. Na condição de vídeo de formato curto, a visualização foi feita no smartphone do próprio participante, numa plataforma de redes sociais à sua escolha. Na condição de formato longo, os participantes escolheram um de seis vídeos pré-selecionados. Os participantes não foram informados antecipadamente de que a percepção do tempo seria medida e a sua duração percebida foi medida através de uma estimativa de autorrelato. A atenção sustentada foi previamente avaliada

através do Teste de Atenção d2. Os participantes da condição de vídeo de formato curto apresentaram uma sobrestimação da duração do intervalo comparativamente à condição de vídeos de formato longo, no entanto esta diferença não foi estatisticamente significativa. Estes resultados não corroboraram a hipótese inicial, sendo, no entanto necessário desenvolver investigação futura, com amostras maiores e maior rigor metodológico.

23. Analysis of Learning Strategies in Pigeons

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To investigate what learning strategies pigeons use, we designed a discrimination task where pigeons were presented with a light for 2, 6, or 18 seconds, then had to choose between a red or green key. Correct choices were: red after 2s and green after 6s or 18s. To learn these associations, pigeons could use two strategies: a multiple-coding strategy (e.g., "If 2s, choose red; If 6s, choose green; If 18s, choose green") or a single-code/default strategy (e.g., "If 2s, choose red; If not 2s, choose green"). Previous studies supporting the single-code/default strategy contained confounds—such as the mapping durations and inter-trial intervals (ITI)—that could produce similar results even if animals used a multiple-coding or choose-short strategy. To address this, we first removed the ITI and used a mapping that dissociates these possibilities. Results remained consistent with a single-code/default strategy. However, without an ITI, reinforcement could serve as a temporal cue, potentially biasing choices toward longer samples. To test this, we ran a second experiment with a reversed mapping (2s and 6s to red; 18s to green). If pigeons used the reinforcement as a time marker, they would show increasing preference for the 18s sample as the delay increases, with accuracy decreasing for 2s and 6s. This pattern was not observed; accuracy dropped to indifference across all durations. The absence of both single-code/default and reinforcement-as-time-marker patterns suggests that pigeons do not rely on a consistent strategy. Instead, the strategy they adopt may depend on which mapping is used.

24. A Discrete Choice Experiment to Examine Food Choices and Attention to Nutrition Labels

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In a world where the overconsumption of ultra-processed packaged foods is one of the leading drivers of the increasing rates of obesity, consumers must know how to interpret and read nutritional labels. In fact, literature shows that individuals who actively read nutritional food labels make healthier food choices. Despite important policy-level measures (e.g., mandatory inclusion of back-of-pack nutrition labels), choice of food products is determined by other aspects other than healthfulness indicators. Moreover, literacy and awareness about the new front-of-pack nutrition labels is reduced. Amidst this scenario, the aim of the present study is to examine the effect of the complexity of the information that is provided about the front-of-pack nutrition label (i.e., Nutriscore) in the individual's food choices and visual attention to specific areas of interest at the time of choice. A discrete choice experiment with pairs of ultra-processed packaged foods will be conducted before and after participants visualize a virtual leaflet with information about the Nutriscore. Three experimental conditions will be carried in which the leaflets differ according to distinct levels of complexity of knowledge about the nutrition label (based on an adaptation of the SOLO Taxonomy - Unistructural, Multistructural, and Relational). During the experiment, participants will wear the Tobii Pro Glasses 3, which will allow to capture individual's attention to specific visual

cues during the completion of the experimental tasks, as well as the visualization of the leaflets. Results will contribute to developing more impactful awareness raising campaigns to help individuals make healthier food choices.

25. Testing and Self-Reference Effects in Children and Adolescents With Down Syndrome

Sara Cadavid (1), Ana-María Gómez-Carvajal (2), María Camila Cortés-Albornoz (2), Valentina Rodríguez-Orrego (1), Alberto Vélez-van Meerbeke (2) and Claudia Talero-Gutiérrez (2)

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Memory research in typically developing adults has consistently shown that retrieval practice (the testing effect) and self-referential encoding (the self-reference effect) enhance episodic memory. However, little is known about whether these strategies also benefit children and adolescents with neurodevelopmental conditions. People with Down syndrome show early and persistent memory difficulties, making the identification of effective learning strategies particularly important. Thirty-six children and adolescents with Down syndrome encoded familiar objects according to two well-established learning techniques: (1) retrieval-based learning, comparing repeated retrieval practice with restudying, and (2) self-referential encoding, comparing self- and other-referential processing. Memory was subsequently evaluated using free recall tests. Results revealed a small but significant advantage for retrieval-based learning, with better memory performance for items encoded through repeated retrieval compared to restudying. No memory advantage was found for self-referentially encoded items relative to other-referential encoding. These findings suggest that retrieval-based encoding could benefit memory in children and adolescents with Down syndrome. More research is needed to clarify the extent of the testing effect in people with Down syndrome and to explore whether other learning techniques could favor memory in individuals with Down syndrome. Future research should examine the robustness of this benefit across longer retention intervals and educationally relevant materials to determine its potential for real-world learning contexts.

26. Desenvolvimento e Validação de uma Tarefa Computadorizada Para o Estudo Experimental da Distância Interpessoal de Conforto

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A distância interpessoal de conforto (DistConf) é um mecanismo central na regulação das interações sociais, sendo modulada por características individuais (e.g., ansiedade social) e por atributos do alvo social (e.g., expressão facial emocional). Apesar da sua relevância, os paradigmas atualmente utilizados para o seu estudo apresentam limitações no contexto da psicologia experimental: ou exigem elevados recursos materiais e competências técnicas especializadas (e.g., realidade virtual), ou dificultam a manipulação controlada de variáveis adicionais, como a emoção facial ou a presença de odores corporais emocionais (e.g., stop-distance task). Este estudo teve como objetivo desenvolver e validar uma tarefa computadorizada com recurso a um joystick para investigar experimentalmente a DistConf, ultrapassando estas limitações. Na tarefa, os participantes ajustavam continuamente o tamanho de faces no ecrã utilizando um joystick até atingirem uma distância de conforto. O tamanho final do estímulo (graus visuais) foi convertido na distância interpessoal representada,

permitindo obter uma medida contínua de DistConf ao longo de múltiplos ensaios. A sensibilidade da tarefa a diferenças individuais (ansiedade social; Liebowitz Social Anxiety Scale) e a atributos do alvo (emoção facial) foi avaliada ao longo de três estudos (N total = 303). Os resultados demonstraram que níveis mais elevados de ansiedade social resultam em maiores DistConf. Foram também observadas maiores DistConf para faces com expressão de raiva, seguidas de neutras e, por fim, felizes, sem interação com o nível de ansiedade social. Os resultados sustentam a validade desta tarefa como medida sensível, de baixo custo, reproduzível e compatível com manipulações multissensoriais no estudo da DistConf.

27. Are Animates More Distinctive Than Inanimate Objects? Evidence From a Perceptual-Distinctive Manipulation

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The animacy effect refers to the robust advantage in recalling animate (e.g., "monkey") over inanimate items (e.g., "table"). According to Evolutionary Psychology, this reflects adaptive memory mechanisms shaped by ancestral survival/reproductive demands: as animates could represent predators, prey, partners, enhanced memory for such items would have been adaptive. However, the cognitive mechanisms underlying this effect remain unclear. One possibility is that animates are inherently more distinctive than inanimates. In this preregistered experiment we examined whether item-based perceptual distinctiveness accounts for the animacy effect. Participants (N=62; Mage=20.29, SD=1.59) encoded 42 animate and inanimate items in a pleasantness-rating task, while perceptual distinctiveness was manipulated: most words appeared in a standard black-Arial-font (non-distinctive) and four in a colored-atypical-font (distinctive). Half words in each condition were animates, half inanimates, selected from European Portuguese norms and matched on mnemonic-relevant variables. After a 2-min distractor task, a surprise free recall task followed. We expected to obtain significant main effects (distinctiveness and animacy). Critically, we predicted that, if animates are more distinctive, adding distinctiveness at encoding would be redundant, resulting in no recall improvement for animates, whereas it should enhance inanimates' recall; thus, a significant Animacy X Distinctiveness interaction would emerge. We replicated the animacy effect ($p < .001$, $\eta^2 = .25$) and obtained a distinctiveness effect ($p < .001$, $\eta^2 = .48$). However, the interaction was non-significant ($F(1, 60) < 1$), suggesting that this type of distinctiveness is unlikely to explain the animacy effect. Future research should explore other potential mechanisms of this adaptive memory phenomenon.

28. Attractiveness Patterns in Brazil and Portugal: Hierarchies of Traits, Ideal Partner Preferences, and Relationship Expectations

Micheline Maria Faheina Saraiva, Lucileia José de Sousa Aranha Oliveira, Walentina Braga de Lira, Joana Arantes
Universidade do Minho - Escola de Psicologia

A Psicologia Evolutiva e Social tem identificado regularidades transculturais na valorização de atributos e ideais de relacionamento amoroso; porém, continuam a ser escassas as comparações diretas entre Brasil e Portugal, especialmente face a transformações socioculturais recentes que poderão estar a reconfigurar prioridades. A amostra inclui adultos (≥ 18 anos) de nacionalidade portuguesa e brasileira, com um tamanho amostral aproximado $N \approx 500$ (≈ 250 por país). Os participantes responderam a um questionário sociodemográfico, à Ideal Standards Scale (ISS) para avaliar ideais de parceiro/relacionamento em dimensões como calor humano/fiabilidade, atratividade/vitalidade e estatuto/recursos, e à Escala de Atributos do Parceiro Romântico (RMAS), em desenvolvimento. Serão realizadas comparações entre Brasil e

Portugal tanto ao nível da hierarquização dos atributos e ideais de parceiro como da sua intensidade média. Adicionalmente, recorrer-se-á a modelos estatísticos para examinar o papel da idade e da escolaridade na valorização desses atributos, bem como a eventual moderação pelo país, controlando variáveis sociodemográficas relevantes. Ao considerar a idade e a escolaridade como fontes de variação individual, o estudo permite avaliar em que medida os padrões descritos na literatura transcultural se mantêm nos contextos lusófonos ou refletem dinâmicas socioculturais específicas. Os resultados contribuirão para o aprofundamento do conhecimento sobre preferências românticas em Portugal e no Brasil e para o desenvolvimento de instrumentos psicometricamente robustos nesta área.

PÓSTERES SESSÃO B | POSTER SESSION B

29. Heurísticas e Saliência: Como Cores, Padrões e Recência Moldam a Previsão de Eventos

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Este estudo investiga de que forma eventos passados influenciam previsões em contextos de incerteza, sobretudo quando a complexidade dificulta um raciocínio estritamente racional. Segundo a Teoria da Utilidade Esperada, decisões ótimas exigem a consideração exaustiva dos resultados possíveis e das respectivas probabilidades. Contudo, em situações complexas, os indivíduos recorrem frequentemente a heurísticas que simplificam o processamento da informação, como a heurística da disponibilidade e a dos pequenos números, que, embora úteis na economia de tempo e energia, podem gerar enviesamentos sistemáticos, como a falácia do apostador. O estudo investiga como padrões de repetição de estímulos visuais modulam previsões em sequências incertas. Os participantes observarão sequências de 20 estímulos (quadrado coloridos com uma cor), e terão de prever as quatro cores seguintes dessa sequência. As proporções entre estas categorias variam entre sequências, permitindo estimar como diferentes proporções afetam os julgamentos de frequência/probabilidade. Adicionalmente, manipula-se a temperatura das cores: no Grupo 1, a "cor fixa" é quente e as "cores variáveis" são frias; no Grupo 2, ocorre o inverso. Dado que cores quentes tendem a ser mais salientes e memoráveis, espera-se que a saliência cromática interaja com a experiência recente, influenciando a tendência para prever repetições e padrões consistentes com a heurística da disponibilidade e a falácia do apostador.

30. How are Loneliness and Social Isolation Associated with Language Abilities in Older adults? A systematic review

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Population ageing poses significant societal and health challenges, with loneliness and social isolation (L/SI) recognized as pressing public health concerns. Social isolation denotes the objective scarcity of social contacts, whereas loneliness reflects the subjective perception that social needs are unmet. Older adults are especially vulnerable due to bereavement, life transitions, and health constraints. Although L/SI has been identified as a risk factor for dementia and global cognitive impairment, evidence focusing specifically on the cognitive-linguistic domain remains limited. Language difficulties may restrict social engagement, increasing vulnerability to L/SI, while reduced social and intellectual stimulation associated with L/SI may, in turn, contribute to language decline. Following PRISMA guidelines, a scoping review was conducted in PubMed, Scopus, and Web of Science without temporal restrictions. Eligible studies included participants aged ≥ 60 years, assessed at least one language and one L/SI measure, and examined their association. Most studies relied on verbal fluency tasks, with fewer employing naming, reading, or narrative discourse measures. Recent investigations have incorporated natural language processing and event-related potentials to identify speech markers such as pausing patterns, prosodic variation, lexical diversity, and discourse coherence. Overall, findings indicate an association between elevated L/SI and linguistic alterations, albeit with some inconsistencies. While several studies report poorer fluency performance in individuals with higher L/SI, others do not find significant associations. In contrast, discursive tangentiality and specific speech-derived markers appear more consistently related to L/SI. Despite the limited and heterogeneous evidence base, language-based markers show promise for identifying at-risk older adults and informing targeted interventions.

31. Impacto do Cancro da Mama, Mastectomia e Metástases Cerebrais na Perceção da Imagem Corporal

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A imagem corporal é um constructo multidimensional que integra pensamentos, emoções e percepções sobre o próprio corpo, envolvendo componentes perceptivos, atencionais e comportamentais. No cancro da mama, particularmente após a mastectomia, são frequentes as dificuldades na aceitação do novo corpo, perda de autoconfiança, vergonha e evitamento da exposição da área. Em neuro oncologia, doentes com metástases cerebrais apresentam elevada carga psicossocial, distress emocional clinicamente significativo e possíveis alterações neurocognitivas, fatores que podem intensificar a vigilância corporal e a perceção do corpo como vulnerável, contribuindo para uma reconfiguração do "self" corporal. Este estudo tem como objetivo desenvolver um modelo preditivo da perceção da imagem corporal em mulheres com cancro da mama submetidas a mastectomia, analisando o contributo de variáveis clínicas, como a presença de metástases cerebrais, psicológicas e sociodemográficas. As participantes completaram, numa única sessão de 25 a 30 minutos, uma série de questionários compostos por um questionário sociodemográfico, a Escala de Ansiedade, Depressão e Stress (EADS-21), a Body Image Scale (BIS) e a Escala de Imagem Corporal e Ajustamento Sexual (SABIS). O relatório da ressonância magnética foi anexado para realizar a caracterização da presença de metástases cerebrais. Serão realizadas correlações de Pearson para explorar associações entre variáveis e regressões logísticas para identificar preditores significativos da perceção da imagem corporal.

32. Remembering in Uncertain Times: Reconstructing Time Memory Across the Pandemic Period

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The COVID-19 pandemic profoundly disrupted daily life, giving rise to widespread experiences of temporal disorientation—popularly termed "blursday." While these subjective distortions of time have been widely reported, less is known about how the pandemic affected memory for the timing of events. The present study investigated the impact of the pandemic on time memory for public events and examined whether lockdown duration, gender, age, news consumption, and social media use moderated this effect. A total of 569 participants were asked to indicate the year in which 30 national and international events occurred between 2018 and 2022, covering pre-pandemic (2018–2019), pandemic (2020–2021), and post-pandemic (2022) periods. We assessed dating accuracy, the extent of temporal distortions, and the ability to correctly sequence events. Results revealed reduced accuracy for events that occurred during the pandemic years (2020–2021) compared to both the pre-pandemic and post-pandemic periods. In contrast, participants' ability to correctly order events chronologically remained relatively preserved. Surprisingly, lockdown duration was not associated with performance, but age and news consumption emerged as significant positive predictors of time memory. These findings suggest that the pandemic acted as a salient temporal landmark, impairing the precise dating of events while leaving broader chronological structuring relatively intact. Moreover, they underscore the role of information exposure, particularly news consumption, in shaping temporal memory for events.

33. It's Not You, It's AI Aversion: No Label Can Fix a Trust Problem

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Discrimination in recruitment and HR processes carries particularly damaging consequences for minority individuals, in terms of careers, organizational diversity, and systemic equality. On one hand, artificial intelligence (AI) is touted to mitigate such bias. On the other hand, given that individuals consistently resist following AI advice (AI aversion), whether AI helps or hinders fair decision-making may depend on well-calibrated user trust. Simultaneously, the European Union (EU) classifies AI systems used in high-stakes decisions as "high-risk", requiring them to comply with stricter regulations—with the CE marking to signal conformity. But can this label effectively signal trustworthiness and reverse AI aversion? To our knowledge, the CE marking's effectiveness in this regard had yet to be empirically assessed. Across two experiments, participants provided initial judgments on candidates' CVs, received advice from either a human or an AI system, which could — or not — be accompanied by a certification label, rated their trust in the advisor, and provided a final judgment. Results revealed egocentric discounting (final judgment closer to initial judgment than the advice), and that trust mediates the relationship between advisor type and updating. Yet, no significant evidence that the CE marking reduces AI aversion was found. A third experiment tested different label designs, but found the previously-used labels to be the most trusted. Taken together, these findings question the ability of the EU AI Act's proposed CE marking to calibrate user trust.

34. Mass Biases the Perceived Speed of Objects in the Brain

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Prior work has characterized how object properties of speed and mass are encoded along visual processing pathways, treating them as independent. Recent work suggested that perception of mass and speed is tightly intertwined: faster objects tend to be perceived as lighter, and heavier objects as slower. This bidirectional influence is thought to arise from real-world physical statistics - heavier objects tend to move more slowly because they take more energy to accelerate. How is the natural relationship between mass and speed internalized within the visual system? One possibility is that the physical statistics shape encoding of mass and speed at the lowest levels of visual processing. Alternatively, the interaction might emerge at higher level regions responsible for more sophisticated predictions about objects' physical behaviors. To discern these possibilities, in the present study, we presented observers with moving objects while parametrically varying the objects' masses and speeds. Participants ($n = 19$) completed a four-alternative forced-choice task while undergoing fMRI scanning, reporting the perceived speed of an object. Ongoing representational similarity analyses tested for the parametric encoding of mass and speed as independent or interactive properties, such that object mass systematically affects the encoding of object speeds consistent with perceptual biases. Preliminary results reveal an interaction between mass and speed along the visual processing hierarchy, identifying candidate brain regions where the statistics of observed object behaviors are internalized by the visual system. Our planned analyses will identify the brain regions that track the strength of the perceived mass-speed interaction on a trial-by-trial basis.

35. Multidimensional Feature-Based Representation of Manipulable Objects in the Human Brain

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Humans recognize objects with remarkable efficiency: while broad category distinctions are well-documented, the neural mechanisms supporting fine-grained representations remain debated. Here, we investigated whether the representations of manipulable objects are structured by a multidimensional space of empirically-derived features. Twenty participants underwent two 3T fMRI sessions with counterbalanced order. In one session, participants viewed 10 manipulable objects varying in grasp type (precision vs. power). In another, they viewed 38 object-related features spanning visual, functional, and encyclopedic dimensions. Whole-brain searchlight MVPA revealed that grasp type was reliably decoded in tool-knowledge network, including early visual areas, fusiform gyrus, posterior middle temporal gyrus (pMTG), supramarginal gyrus (SMG), and superior parietal lobule (SPL). Furthermore, three feature types were successfully classified within early visual areas, fusiform gyrus, and left inferior parietal lobe (IPL) ($p < .01$, uncorrected), suggesting a hierarchical organization of object properties. To bridge these findings, searchlight Representational Similarity Analysis (RSA) demonstrated that neural similarity among objects was significantly predicted by behavioral feature-based similarity along ventral and dorsal pathways, including left IPL, bilateral fusiform, and parahippocampal gyrus ($p < 0.01$, uncorrected). We are currently implementing voxelwise encoding models to test whether weighted combinations of these multidimensional features can directly predict cortical activation patterns of visual objects. Together, this work will show how complex, fine-grained object knowledge is dynamically constructed from specific multidimensional feature components in human brain.

36. Musical Ability and Emotion Recognition in Speech Prosody: The Role of Pitch Discrimination

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Why does musical expertise predict enhanced emotion recognition in speech prosody? Evidence for a causal role of music training is weak, and correlations with musical aptitude could reflect basic auditory abilities rather than musicality per se. Here, we tested whether individual differences in basic auditory discrimination account for the music–prosody association. A total of 164 adults completed forced-choice judgments of emotions in prosody and facial expressions, self-reports of musical experience, objective tests of musical ability (melody and rhythm perception), and adaptive psychoacoustic tasks that estimated discrimination thresholds for pitch, duration, loudness, timbre, and backward masking. Both music training and musical ability correlated with better recognition of prosodic but not facial emotions. The training effect was weak, however, and disappeared after controlling for confounding variables, including general cognitive ability. By contrast, musical ability, specifically melody perception, remained associated with prosodic emotion recognition after accounting for training and other covariates. Crucially, psychoacoustic thresholds correlated with both prosody recognition and melody perception. When considered simultaneously, pitch discrimination alone independently predicted prosodic emotion recognition, but melody perception did not. These findings suggest that music training is an artifactual correlate of prosodic emotion recognition, and that basic pitch sensitivity underlies the link between musical ability and emotional prosody.

37. Prior Schemas Influence on Episodic Memory Outcomes among Healthy Older Adults: A Systematic Review

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Aging is associated with a natural decline in episodic memory (EM). Still, schematic learning, leveraging prior knowledge or structured frameworks, emerges as a potential strategy to modulate this process in healthy older adults (van Kesteren et al., 2012). This systematic review examines whether prior schemas facilitate better EM outcomes compared to non-schematic approaches. Following PRISMA guidelines, experimental and interventional controlled trials involving healthy adults (≥ 55 years) were included. The search was conducted across the Web of Science, Scopus, PubMed, and B-on/Ebscohost databases. Study quality was evaluated using the Cochrane Risk of Bias Tool 2. The integrated data is organized by task type, mapping differences between recall and recognition paradigms. The prevalence of prior knowledge effect was qualitatively reported across encoding and retrieval processes. Moreover, neural correlates of prior schema facilitation were congregated, such as mPFC and hippocampal engagement or theta/alpha synchronization. The influence of crucial moderating variables, including the specific type of schema approach (i.e., schema congruency, schema training, semantic organization, narrative schema, or prior-knowledge activation), encoding modality (conceptual vs. perceptual; visual, verbal, combined), strategy orientation (guided vs. spontaneous), and retention intervals (immediate or delayed), was examined. Through this synthesis, it is determined which schematic strategies are most efficient at compensating for EM losses, and their relevant moderators and neural correlates are identified.

38. "Can You Turn Off the Lights?": Cognitive Distraction During Sexual Activity

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Recognition of the importance of sexual health has increased in recent years, accompanied by a growing body of research on difficulties experienced during sexual activity, such as cognitive distraction. However, most of this research has focused primarily on heterosexual individuals. The present study aimed to examine the impact of cognitive distraction during sexual activity on body satisfaction and sexual satisfaction among individuals with different sexual orientations. The study included 2,912 participants (1,674 men and 1,171 women), aged between 18 and 73 years ($M = 26.53$; $SD = 7.94$). Participants completed an online questionnaire that included sociodemographic questions, the Body Appearance Cognitive Distraction Scale, the Situational Body Satisfaction Scale, and the New Sexual Satisfaction Scale. The results indicated that asexual individuals reported higher levels of body appearance-related cognitive distraction during sexual activity compared to heterosexual and homosexual individuals. Additionally, higher levels of body appearance-related cognitive distraction during sexual activity were associated with lower body satisfaction and lower sexual satisfaction. These findings highlight the importance of addressing body-related cognitive processes during sexual activity when promoting sexual well-being across diverse sexual orientations.

39. Insula Connectivity Modulation on Fruit and Vegetable Processing in the Ventral Temporal Cortex

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The ventral visual stream has been documented as playing a central role in visual object recognition. Within the Ventral Temporal Cortex (VTC), regions have shown to respond selectively to various stimuli categories (e.g. faces, places, etc...). Few object categories can be considered as more important for our survival than food, yet evidence for food-selective areas in the brain is still sparse. This study focused on identifying cortically selective areas tuned for the visual processing specifically for fruits and vegetables. Following recent research on food processing, we investigated how these responses share characteristics with stimuli such as tools through a functional connectivity analysis. A blocked design fMRI passive-viewing object visualisation experiment was conducted. We found areas selectively activated for fruits and vegetables along the ventral stream, as well as parietal areas (e.g. aIPS) and the insula. Whole-brain functional connectivity was then derived for the insula and aIPS, and their connectivity was correlated with task-based activation. A whole-brain searchlight identified regions along the VTC whose activation to fruits & vegetables rather than tools is modulated by the region's functional connectivity to the insula. While connectivity from the aIPS has a modulatory impact for activations of both fruits & vegetables and tools in the VTC. These findings suggest that an insular connectivity to the VTC may play a role in the mental recognition of fruits & vegetables, and that graspable elements may be of a similar importance to the processing of fruits & vegetables as they are to tools.

40. Romantic Partner Attributes Scale: Development and Psychometric Validation

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A investigação sobre preferências na seleção de parceiros românticos tem sido dominada por instrumentos estruturados a partir de modelos teóricos prévios, frequentemente desenvolvidos em contextos culturais específicos e com reduzida integração de procedimentos indutivos. Tal abordagem pode limitar a validade de conteúdo e a sensibilidade às variações culturais. O presente estudo integra um projeto mais amplo sobre atratividade e infidelidade em Portugal e no Brasil e tem como objetivo a construção e validação psicométrica da Romantic Mate Attributes Scale (RMAS), uma medida multidimensional das preferências por atributos de parceiro romântico. A construção da RMAS partiu de um procedimento de elicitação aberta, com 457 participantes (242 portugueses e 215 brasileiros) indicaram livremente características desejadas num parceiro. O corpus lexical obtido foi submetido a um processo sistemático de análise semântica, eliminação de redundâncias e agregação conceptual, resultando numa matriz organizada de 65 atributos representativos. Esta organização foi conduzida com base em critérios teóricos derivados da literatura sobre preferências de parceiro e em princípios metodológicos de validade de conteúdo, preservando a especificidade semântica das respostas originais. A estrutura latente do instrumento é analisada através de Análise Fatorial Exploratória (SPSS), seguindo-se a Análise Fatorial Confirmatória (AMOS) para avaliação preliminar do ajustamento do modelo proposto. A consistência interna é estimada por meio do alfa de Cronbach. São ainda realizadas análises de correlação para examinar associações entre as dimensões da RMAS e variáveis relacionais, bem como testes t e ANOVA para explorar diferenças em função do género, orientação sexual e contexto cultural (Portugal vs. Brasil).

41. Snake Detection's Accuracy Paradox: Evolved Speed Over Precision in Threat Perception

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Introduction: Snakes are phylogenetically relevant threat stimulus, shaped by approximately 60 million years of primate–predator co-evolution. They are thought to activate specialized fear modules via rapid subcortical pathways that support efficient threat detection. Contemporary predictive coding frameworks further propose that perception operates by minimizing prediction error under uncertainty, potentially biasing detection toward evolutionarily salient threats. Despite these complementary perspectives, relatively few studies have employed picture morphing techniques to investigate these mechanisms. Methods: The present study examined behavioral responses using a novel picture-morphing paradigm in a sample of 56 participants, who also completed Pichot Fatigue Scale and the Snake Anxiety Questionnaire. Forty morph sequences were created and categorized into four groups: snakes, other threatening animals, neutral stimuli, and neutral stimuli with snake-like features. Each sequence had a maximum duration of five seconds. Participants were instructed to classify each morph as either threat ("N") or non-threat ("V") as fast as they could. To control for motor preparation effects, key assignment was counterbalanced. Reaction times and accuracy were recorded for all trials. Results: A linear mixed model revealed a significant category × fear of snakes interaction on reaction times. Simple slopes analyses indicated that higher snake fear predicted significantly longer RTs for neutral snake-like morphs, but not for actual snake morphs. However, accuracy was significantly lower for snakes and other threatening animals compared to neutral and neutral snake-like morphs. Conclusions: The pattern of reduced accuracy coupled with faster RTs for phylogenetically prepared threats suggests an evolved speed–accuracy trade-off.

42. Temporal and Non-temporal Control in a Midsession Reversal Task with Variable Inter-trial Intervals

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A midsession reversal task is a procedure where the contingencies of the reinforcement reverse when a session reaches its midpoints. For instance, imagine a procedure where a pigeon has to choose between two stimuli, say, a green (S1) or a red button (S2). If a session has 80 trials, responses to S1 are reinforced from trials 1 to 40, and responses to S2 are reinforced from trials 41 to 80. In this task, there are a few strategies a pigeon can use to predict when the reinforcement reversal from S1 to S2 will occur. One would be to simply start choosing S1 and keep this choice until the first mistake is made, switching to S2 for the remaining trials. Another possibility would be to count the trials, only switching after reaching trial 40. However, we see that pigeons use a third strategy: the time spent in the session. For example, if the reversal (trial 40) usually happens after 5 minutes, a subject using timing would only switch their choice to S2 when they assume that 5 minutes have elapsed since the session started. While this strategy is not the most efficient way to deal with the midsession reversal, the persistence of this temporal preference has been robustly demonstrated throughout the literature. However, it is still not clear if pigeons opt solely for this strategy or if other cues are also at play, our main goal was to further elucidate this ongoing discussion.

43. The Influence of Mating-related Encoding and of Carotenoid Coloration in Recognition Memory

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Reproduction plays a crucial role in the evolutionary process. However, the influence of reproduction-related contexts on memory remains unclear, with prior research yielding mixed findings. The present study addresses this question, aiming to advance the field while also exploring a relatively overlooked characteristic: carotenoid coloration, a skin color derived from a diet rich in carotenoids. This coloration may serve as a cue of mate value given its association with perceived facial attractiveness and health, immune function, and photoprotection, all of which are relevant to mate selection. Following the procedure used by Pandeirada et al. (2017), female participants will view a series of opposite-sex faces, each paired with a brief descriptor. They will imagine themselves either searching for a long-term romantic partner (mating condition) or a coworker (non-mating condition) while evaluating each face and descriptor. This will allow replication of the original study's findings. Importantly, for each participant, faces will vary in carotenoid coloration (high vs. low). After completing a distractor task, participants will perform a surprise face-recognition task. Finally, for manipulation-check purposes, they will rate the attractiveness of each face. We predict better recognition performance in the mating (vs. worker) condition and for high-carotenoid (vs. low-carotenoid) faces. We further expect this last effect to be stronger in the mating condition, yielding a significant interaction. This study will enhance understanding of recognition memory, its role in human reproduction, and the significance of carotenoid coloration in this critical evolutionary process. Data collection is expected to be completed by the event date.

44. Tomada de Decisão em Contextos de Saúde: Determinantes de Adesão a Tratamentos Alternativos

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A OMS (2022) identificou a desinformação como um dos principais desafios globais em saúde, associando-a à erosão da confiança nas instituições médicas e científicas e ao aumento do ceticismo face a intervenções baseadas em evidência. Torna-se, assim, fundamental compreender os mecanismos subjacentes à tomada de decisão em contextos de saúde. Com base nos dados da 11.ª ronda do European Social Survey (ESS11), analisaram-se preditores da utilização de tratamentos alternativos numa amostra de 46162 participantes de 28 países europeus. A utilização de tratamentos alternativos foi operacionalizada através do autorrelato de recurso a terapias como acupuntura, quiroprática, osteopatia e homeopatia. A vacinação contra a COVID-19 foi utilizada como indicador de adesão a intervenções convencionais baseadas em evidência. Modelos de regressão logística revelam que níveis mais elevados de escolaridade, maior satisfação com os serviços de saúde e pior avaliação do estado de saúde se associam a maior utilização de tratamentos alternativos e, a par de uma maior confiança nas instituições, associam-se a uma maior probabilidade de vacinação. Maiores níveis de religiosidade e menor perceção de controlo sobre a vida predizem uma maior adesão a tratamentos alternativos e, a par de uma orientação política mais à direita, associam-se a uma menor probabilidade de vacinação. A utilização de tratamentos alternativos associa-se ainda a menor probabilidade de vacinação. Estes resultados sugerem que

as decisões relativas a tratamentos alternativos e convencionais assentam em configurações parcialmente distintas de mecanismos psicossociais. A clarificação destes processos constitui um contributo relevante para o estudo empírico da tomada de decisão em saúde.

45. Using Virtual Reality to Study and Improve Eyewitness Memory

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Witnesses play a critical role in criminal investigations, but cognitive processes like memory influence their ability to recall important details. To address this, psychologists developed science-based interviewing techniques, such as the Cognitive Interview, that improve eyewitness testimony. However, much of the experimental research supporting the use of these techniques employed a mock-witness paradigm, where participants observed a crime on a 2D screen. This research paradigm does not accurately reflect real-life eyewitness experiences, raising concerns about the ecological validity of these findings. With the rise of immersive virtual reality (VR) technology, this project aims to evaluate the effectiveness of current interviewing strategies in a more realistic setting and, for the first time, evaluate whether virtual interview rooms with contextual cues from the crime scene can be used to further improve eyewitness testimony. In this poster, we present two studies: Study 1 tested whether presenting a 360-degree immersive crime using a VR headset would be evaluated as more realistic than presenting the same crime on a computer screen. Study 2 tested whether interviewing witnesses in different VR environments (virtual and augmented reality) containing contextual cues from the crime scene would improve memory in comparison with mental reinstatement of context. Physiological and subjective measures of presence were higher when presenting the crime using the VR headset, suggesting this can improve the ecological validity of eyewitness memory experimental research. Virtual interview environments did not improve recall compared with conventional mental reinstatement techniques, supporting the use of mental reinstatement due to requiring no specialised equipment.

46. Neural Mechanisms Underlying Short Term Visual Plasticity: an EEG Study

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Cortical excitation-inhibition (E/I) balance is crucial for neuroplasticity. Plasticity is high during development but declines in adulthood as inhibitory circuits mature. Disruptions in E/I balance are linked to disorders such as amblyopia. Although adult neuroplasticity is limited compared to developmental periods, attention and brief monocular deprivation (MD) can transiently reopen cortical plasticity. In this study, we examined E/I balance in humans using EEG. Eight ($N=8$ age = 18.125 ± 0.354) participants performed a binocular rivalry task under three conditions while the neural activity was recorded: (1) standard rivalry, (2) rivalry with transient stimuli without responses, and (3) rivalry with transient stimuli requiring active responses. All tasks were conducted before and after a 2.5-hour monocular patch of the dominant eye, and participants also completed a 5-minute eyes-closed condition. EEG from occipital electrodes was analyzed using aperiodic slope and frequency-band measures to assess E/I balance, and Ocular Dominance Index (ODI) was calculated, while switch rates (SR) were recorded concurrently. Our results revealed that following the MD period: a) ODI increased by 54.07%, 41.12%, and 62.97%, while the perceptual switch rate decreased by 27.22%, 1.56%, and 9.45% in standard rivalry, transient stimuli without responses, and transient stimuli with active responses, respectively; b) the aperiodic slope

decreased during the eyes-closed condition, indicating enhanced cortical plasticity; and c) a negative correlation was found between the beta-to-gamma band ratio and SR during the active rivalry task. These findings suggest that EEG can serve as a robust biomarker of the E/I ratio and, consequently, of cortical plasticity.

47. Verdadeiro ou Falso? Intervenções Gamificadas Ensinam a Detetar Desinformação?

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A rápida disseminação de informações falsas exige medidas para melhorar a literacia mediática. A inoculação cognitiva visa reduzir a suscetibilidade à desinformação, ensinando a reconhecer estratégias de manipulação. Contudo, é possível que a inoculação aumente o ceticismo geral, reduzindo a credibilidade das notícias reais e falsas. Neste estudo, investigámos se uma intervenção de inoculação gamificada – o Bad News – reduz a credibilidade das notícias falsas manipuladoras (hipótese da inoculação) ou a credibilidade das notícias em geral (hipótese do ceticismo). No Estudo 1, estudantes do 3.º ano de Psicologia classificaram a credibilidade de notícias antes e depois de jogarem Bad News (n = 41) ou Tetris (n = 62). Ambos os jogos produziram reduções semelhantes na credibilidade de notícias reais e falsas, indicando um aumento generalizado de ceticismo. No Estudo 2 examinamos se a exposição repetida a um conjunto de notícias poderia, por si só, induzir ceticismo. Alunos do primeiro ano de Psicologia foram distribuídos em quatro grupos. Dois grupos avaliaram notícias antes e depois de jogar Bad News (n = 10) ou Tetris (n = 17) - grupos pré-pós-teste - enquanto os outros dois avaliaram notícias apenas depois de jogar um dos jogos (Bad News, n = 21; Tetris, n = 25) - grupos pós-teste. Encontrámos alguma evidência de efeito de inoculação na comparação dos grupos pré-pós-teste, entretanto, a mera exposição às notícias não aumentou o ceticismo. Estes resultados sugerem que estabelecer um efeito de inoculação por meio de jogos é desafiador e pode depender da forma como o efeito é avaliado.

48. Neural Correlates of Predictive Processing in the Visual Hierarchy

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The visual cortex generates predictions about the visual world that shape perception, becoming especially relevant when direct sensory input is absent. This fMRI study investigates how neural activity varies across the visual hierarchy depending on whether cortical regions fall inside or outside the artificial scotoma projection zone (ASPZ), offering insight into the balance between feedforward and feedback processing. Twelve participants completed fMRI scanning across two sessions while viewing short video clips under conditions combining the presence or absence of an artificial scotoma with congruency and orientation judgements. Retinotopic mapping and a scotoma localiser were acquired to define visual areas (V1, V2, V3, LO) and identify voxels inside and outside the ASPZ. BOLD amplitude profiles were extracted across the visual hierarchy for both scotoma and no scotoma conditions. Connective field modelling was additionally employed to examine inter areal communication dynamics. We obtained distinct BOLD amplitude profiles across visual areas depending on scotoma condition. During conditions containing an artificial scotoma, BOLD modulation within the ASPZ was reduced compared to outside the ASPZ, but with a pattern consistent with task-driven activity rather than spontaneous activity. Notably, as we move up the visual hierarchy, BOLD signals within the ASPZ become increasingly similar to those obtained outside the ASPZ, suggesting a progressive convergence of feedforward and feedback signals from early to higher visual areas. Furthermore, this pattern is consistent with differential contributions of feedforward and feedback processing to

cortical activity within and beyond the scotoma boundary. These results advance our understanding of how the brain maintains cortical activity without direct sensory input.

49. Fake News in the Real Brain

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Fake news travels 6 times faster and is shared 10 times more often than real news, and led the UN in 2020 to classify it as a major global threat. But is it differentially processed by humans? Here we will review the current literature on how humans detect and process fake news and related effects such as the Continued Influencing Effect of Misinformation (CIEM). Regarding the neural processes involved, currently, there is no consensus. EEG studies report no significant difference between true and false item exposure. However, deeper neural structures may be capable of differentiating fake and veridical information. Moreover, computational models achieve high accuracy distinguishing fake from real news, suggesting clear content/format signatures of both types of information. Such findings suggest that brain structures may be able to differentiate between fake and real news, perhaps implicitly, and that explicit control processes influence encoding of truth and falsehood. This review will provide fundamental knowledge regarding human detection and processing of fake news. These insights aim to translate into more robust computational detection models and interventions designed to combat the spread of disinformation.

50. Metamemory Monitoring and Control Mechanisms in the Reinforced Self-Affirmation Method

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The misinformation effect refers to the acceptance of information inconsistent with an original event. Acceptance of misinformation has profound negative consequences in legal settings, prompting researchers to seek ways to minimise its impact. One of such ways is the reinforced self-affirmation (RSA) method. Previous research has suggested that the RSA reduces misinformation acceptance by boosting self-confidence. However, the specific cognitive mechanisms through which RSA operates remain unclear. From a metamemory perspective, RSA could affect either, or both, metamemory monitoring or control processes. The monitoring process evaluates the quality of memories and the control process decides what to do with those memories next, for example whether to report or withhold that information. We conducted an experiment to test whether monitoring and control processes are affected by the RSA in an experiment without misinformation. We presented a bank robbery video. Half of the participants completed the RSA and the other half did not. Then, participants answered 40-cued recall questions about the video. To test the effect of RSA on monitoring, we requested confidence ratings. To test the effects on control, we gave participants the chance to report or withhold their responses. The results showed that RSA increased resolution during monitoring, apparently by increasing confidence in correct responses and reducing it in incorrect responses. The RSA did not affect measures of the control process or memory, nor did it affect overall confidence. This research showed that RSA improves metamemory monitoring, which could help identify new applications in other areas.

51. Modelação Baseada em Agentes para Estudos de Reprodução Serial

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Os estudos de reprodução serial consistem em utilizar material produzido por um dado participante (e.g., a sua recordação ou estimativa de uma quantidade) como estímulos para um participante seguinte, de forma a que os participantes formem cadeias de comunicação. Estes estudos têm permitido estudar memória, estereótipos, julgamento e tomada de decisão, evolução cultural e linguística, entre outros processos, adicionando uma importante dinâmica social tipicamente ausente dos estudos laboratoriais: o facto de que, muitas vezes em sociedade, a informação na qual nos baseamos para formar memórias, julgamentos, entre outros, é transmitida por outras pessoas. Neste trabalho apresentamos a modelação baseada em agentes como uma ferramenta que permite melhorar o planeamento e design dos estudos de reprodução serial ao permitir um cálculo de poder, através de simulações, considerando diferentes aspectos metodológicos (e.g., número de participantes por cadeia e números de cadeias) e teóricos (e.g., modelando diferentes processos de distorção do material que é transmitido). Apresentamos um estudo de caso onde simulamos um enviesamento de julgamento e comparamos os resultados da simulação com os obtidos num estudo laboratorial com três gerações de quarenta participantes cada. Discutimos o que estes resultados sugerem para a melhoria do design de estudos de reprodução serial e o valor da modelação baseada em agentes para os estudos de reprodução serial.

52. O Nível de Açúcar no Sangue Provoca Diferenças no Desempenho Cognitivo?

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A associação entre o desempenho cognitivo e os níveis de glicose no sangue tem sido amplamente investigada através de estudos experimentais, que sugerem efeitos positivos da ingestão de açúcar em tarefas que envolvem atenção. Estes efeitos tendem a ser mais evidentes nos momentos imediatamente subsequentes à ingestão, diminuindo progressivamente ao longo do tempo e desaparecendo, em média, após cerca de uma hora. O presente estudo teve como objetivo investigar a influência da ingestão de açúcar no desempenho atencional, manipulando o estado metabólico prévio dos participantes. Foram comparados dois grupos: um grupo em jejum e um grupo não em jejum (estado pós-prandial). Ambos ingeriram uma barra de chocolate quinze minutos antes da realização das tarefas, permitindo avaliar se o estado metabólico basal modera o efeito da ingestão de glicose no desempenho. A atenção foi medida através de duas tarefas de discriminação visual destinadas a avaliar atenção concentrada. Os resultados não revelaram diferenças estatisticamente significativas no desempenho entre os grupos nem entre os dois momentos de avaliação. A ausência de efeitos poderá estar relacionada com a reduzida exigência das tarefas utilizadas, com a eventual presença de um efeito de teto ou com características específicas da amostra, fatores que poderão ter limitado a sensibilidade do estudo para detetar diferenças subtis no desempenho atencional.

53. O Papel da Qualidade de Sono na Frequência de Queixas de Memória Subjetivas

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Universidade do Minho

A qualidade do sono está associada a alterações na atenção, memória e funcionamento executivo. Para além das alterações observáveis através do desempenho em tarefas específicas, o sono pode afetar também a percepção subjetiva do funcionamento mnésico, resultando no aumento de queixas de memória. Porém, o papel específico da qualidade do sono e da sonolência diurna no aumento da frequência das queixas permanece pouco esclarecido na literatura. Este estudo procura analisar a associação entre a qualidade do sono, a sonolência diurna e a frequência de queixas de memória subjetivas. A qualidade do sono foi avaliada através do Índice da Qualidade de Sono de Pittsburgh (PSQI, João et al., 2017) e a sonolência diurna pela Escala de Sonolência de Epworth (ESS, Santos, 2001). As queixas de memória foram avaliadas através do Questionário Multifatorial de Memória (QMM, Rooji et al., 2024) e da Versão Revista do Questionário da Memória do Dia-a-Dia (QMDaD-VR, Rodrigues et al., 2025). Neste estudo, participaram 209 adultos. A recolha ainda decorre, mas espera-se que piores indicadores de qualidade do sono e maiores níveis de sonolência diurna estejam associados a uma maior percepção de frequência de queixas de memória. Estudar esta associação pode contribuir para uma melhor compreensão de fatores que influenciam a percepção do desempenho mnésico e para o desenvolvimento de estratégias de promoção de higiene do sono.

54. Categories as Retrieval Cues: A Systematic Review of Their Effects on Memory Performance

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When individuals study lists of words that belong to identifiable categories (e.g., animals, fruits), even if presented in random order, they tend to recall category members consecutively during free recall - a robust phenomenon known as clustering. This spontaneous organizational effect suggests that categorical structure plays a fundamental role in retrieval processes. Building on this evidence, categories have been used as explicit retrieval cues (e.g., self-generated or provided at recall). However, no systematic review has synthesized empirical evidence regarding the effectiveness of category-based recall compared to free recall or alternative cueing strategies. The present study proposes a systematic review examining whether the use of categories as retrieval cues enhances memory performance. Eligible studies will include experimental designs in non-clinical samples in which categories (of any type, e.g., semantic, phonological, taxonomic, ad-hoc) are generated or provided at the moment of recall, and at least one comparison condition is present (e.g., free recall, no cues, other cue types). Behavioral memory performance must serve as the primary dependent variable. Only peer-reviewed articles published in English or Portuguese will be included. The review will follow PRISMA 2020 guidelines. Searches will be conducted in PsycINFO, Web of Science, Scopus, and PubMed using combinations of terms such as: ("category recall" OR "category clustering" OR "category cues" OR "category-based retrieval") AND ("free recall" OR "memory performance" OR "retrieval"). With this review, it is expected to clarify whether category-based recall confers consistent advantages over alternative retrieval strategies and to identify boundary conditions and moderating variables influencing its effectiveness.

55. Does the Teacher Still Win? Attention and the Boundaries of AI in the Classroom

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U.minho

Artificial intelligence tools have rapidly entered education, but it remains unclear whether they can match traditional instruction for immediate knowledge acquisition and under what conditions. We compared immediate learning under three conditions: a classroom lecture, self-directed use of an artificial intelligence tool, and tutor-guided use of an artificial intelligence tool. Forty-five psychology students from a nonrandom convenience sample were allocated to lecture ($n=24$), self-directed artificial intelligence ($n=9$), or tutor-guided artificial intelligence ($n=12$). All groups studied polymers and plastics for 10 minutes and then completed a 15-item multiple-choice test. The lecture group outperformed both artificial intelligence conditions ($M=14.17$, $SD=0.96$; 94% accuracy) relative to the self-directed group ($M\approx 12.8$, $SD\geq 1.20$; $\sim 85\%$ accuracy) and the tutor-guided group (similar performance). A one-way analysis of variance showed a group effect, $F(2,42)=7.40$, $p=.002$, $\eta^2=.26$, corroborated by a Kruskal–Wallis test, $H(2)=12.15$, $p=.002$, $\varepsilon^2=.24$. Post hoc Mann–Whitney tests with Bonferroni correction indicated large differences between lecture and each artificial intelligence group (both $p<.03$, $d>1.10$), with no difference between artificial intelligence groups ($p=1.00$, $d=.04$). These preliminary findings are consistent with an advantage of structured lecture instruction for short-term learning, but design constraints (nonrandom allocation, no prior-knowledge control, no direct attention measure, and the researcher's dual role as tutor) preclude causal inference. Results should be interpreted as hypothesis-generating; ongoing work will address these limitations with more rigorous designs.

56. Frequency-Specific tACS Over the Dorsolateral Prefrontal Cortex Does Not Enhance Working Memory in Healthy Adults: A Randomized Crossover Study

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Introduction: Transcranial Alternating Current Stimulation (tACS) is a non-invasive neuromodulation technique that entrains neural oscillations associated with cognitive processes, such as working memory (WM). Frequency-specific stimulation, particularly in the theta and gamma bands, has been proposed to modulate frontoparietal networks involved in WM performance. **Objective:** To examine the effects of theta- and gamma-frequency tCAS applied to the left dorsolateral prefrontal cortex (F3) with a contralateral supraorbital return electrode (Fp2) on WM performance in healthy adults. **Methods:** In a randomized, sham-controlled, crossover design, 30 volunteers (mean age, 20.5 ± 5.35 years; 86.7% women) underwent three stimulation sessions (theta tACS, gamma tACS, and sham), each combined with cognitive training. WM was assessed with the n-back task (versions 0, 2, and 3) and digit span (WAIS-III). Primary outcomes were accuracy (ACC) and reaction time (RT) on the n-back task. Secondary measures included mood, stress, cognitive complaints, and perceived workload and Stress Scales (EADS-21), the Cognitive Failure Questionnaire (QFC 2.0), the Positive and Negative Affect Scale (PANAS), and the NASA Task Load Index (NASA-TLX). Adverse effects were monitored after each session. **Results:** No significant differences were observed between sessions in baseline demographic or clinical characteristics ($p > 0.05$). n-back performance remained stable, with no significant changes in ACC or RT ($p > 0.05$), and a

cognitive load effect was evident (2-back: ~85–90% ACC; 3-back: ~55–60% ACC). For Digits Backward (WAIS-III), no significant effects were found for group ($F(2,143)=0.946$; $p=0.391$), time ($F(1,143)=3.810$; $p=0.053$), or group \times time interaction ($F(2,143)=0.298$; $p=0.743$). A significant session effect was observed ($F(2,143)=20.452$; $p<0.001$). Bonferroni-corrected comparisons showed progressive improvement across sessions, indicating a practice effect. Conclusion: In this sample of healthy young adults, single session theta or gamma frequency tACS over the left dorsolateral prefrontal cortex did not significantly modulate WM performance. The protocol was safe and well-tolerated. Further studies are needed to optimize stimulation parameters and identify conditions under which tACS may enhance working memory.

57. Does Listening to Music That You Like or Dislike Affect Your Memory While Studying?

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Background music refers to music played while the listener's primary attention is focused on another task or activity. Background music can have detrimental or beneficial effects on memory depending on a variety of factors, such as age or prior experience of the listeners, or tempo, complexity, or familiarity with the music. An overlooked factor is the musical preference. Is it the same to listen to liked or disliked music? Liked background music could generate positive feelings that could enhance memory compared to less liked music. However, liked music could also lead to distraction that could impair memory. We conducted an experiment to test the influence of musical preference on memory and metamemory when studying an academic-type text. Participants first classified seven musical genres from the most to the least preferred. Then, they read a popular science article while listening to a song corresponding to their preferred musical genre or to their less preferred genre. After reading, participants completed a distractor task and answered a cued-recall memory test on the content of the article. Participants also indicated their confidence that their answer was correct. Results indicated no significant effect of music preference on memory performance or confidence. These findings suggest that listening to liked versus disliked background music does not influence memory performance or confidence.