

XXXII Conference **AIP** Italian Association of Psychology

Experimental Section

September 3-5, 2026
Venice



A

1. Music and Sustained Attention: The Role of Absorption

Lilya Abergel¹, Jérôme Dokic², Marco Sperduti³, Laura Ferreri⁴

¹ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy / Institut Jean Nicod, Ecole Normale Supérieure (ENS-PSL), Paris, France

² Institut Jean Nicod, Ecole Normale Supérieure (ENS-PSL), Paris, France

³ Department of Systems Medicine, University of Roma Tor Vergata, Roma / Laboratoire Mémoire, Cerveau et Cognition, Psychology Institute, University Paris Cité, France

⁴ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

Poster · Attention, perception and consciousness

Music is known to modulate attentional focus, with evidence suggesting that background music can enhance task engagement and performance. However, these findings remain inconsistent. These discrepancies might be due to task characteristics, particularly difficulty, with music appearing more beneficial for easier tasks. Interestingly, music also facilitates attentional engagement toward spontaneous thoughts (e.g., mind-wandering), that has been classically associated with poorer task performances. Despite these seemingly opposite outcomes it is possible that music acts through a common mechanism: absorption. The present study investigated whether background music, depending on task difficulty, influences attentional performance and whether such effects are driven by absorption. 78 participants completed an online adapted Mackworth Clock Task in two counterbalanced blocks (music vs. silence), under easy or difficult conditions. Thought probes assessed attentional states, and subjective time perception and fatigue ratings were used as proxy measures of absorption. Results revealed no main effects of music or interactions with task difficulty on performance or attentional reports. However, order effects emerged: performance declined in the second block, suggesting time-on-task effects. Interestingly, reaction times slowed and fatigue increased only for participants that completed the music condition first. When music was presented in the second block, these effects were attenuated. Furthermore, participants reported significantly faster subjective passage of time during the music condition. These findings suggest that, while music alters subjective experience, it does not directly improve vigilance performance. Instead, its effects are context-dependent and emerge over-time, suggesting that music may help buffer fatigue and sustain attention as cognitive resources decline.

2. Olfactory Modulation of Implicit Social Biases: A Novel Application of the Implicit Association Test

Michela Alemanno¹, Ilaria Di Pompeo², Martina Marcaccio², Simone Migliore², Giuseppe Curcio²

¹ Università degli Studi dell'Aquila

² Università degli Studi dell'Aquila

Mini-talk · Social cognition

The Implicit Association Test (IAT) is a well-established measure of automatic mental associations, revealing implicit biases toward social categories such as race, body weight, and sexual orientation. Although olfactory cues influence social perception and behavior, their potential to modulate implicit biases remains largely unexplored. This ongoing study tests whether passive exposure to four distinct odorants such as propionic acid (rancid/sweat-like), androstienone

(male-associated), equilin (female-associated), and ursolic acid (sweat odor), differentially affects IAT performance across three social domains, compared to a no-odor control condition. Fifty participants are equally distributed across five conditions. Following a Sniffin' Sticks olfactory screening to exclude individuals with smell deficits, participants complete self-report measures of explicit attitudes and individual differences. During the computerized IAT, odorants are delivered passively via a cotton pad attached to a chinrest, positioned directly below the nose. The IAT requires rapid categorization of images and words for black/white, thin/obese, and heterosexual/homosexual dimensions under standard and reversed mappings. Following best practices, we implement strict trial alternation, counterbalanced block order, and the standard D-score algorithm. This study bridges chemosensory science and implicit social cognition. The findings of this study could clarify whether specific odorants attenuate, exacerbate, or leave implicit biases unchanged, and whether these effects interact with explicit attitudes or olfactory sensitivity. These results could be used in future to develop innovative methodologies aimed at increasing psychological well-being and cognitive performance.

3. Everyday moral decisions: Examining choices and judgments in ecological scenarios

Federica Alfeo¹, Chiara Rizzotto², Febbronia Riggio², Amelia Gangemi², Tiziana Lanciano¹

¹ Department of Education, Psychology, Communication, University of Bari "Aldo Moro", 70122 Bari, Italy

² Department of Cognitive Sciences, University of Messina, 98122 Messina, Italy

Intervento in simposio · Reasoning and abstract cognition

Valutare l'adeguatezza morale di uno scenario decisionale implica spesso il confronto tra principi in conflitto, rendendo difficile individuare una risposta univocamente "giusta". Situazioni di questo tipo, comunemente definite dilemmi morali, emergono anche nella vita quotidiana; tuttavia, la ricerca empirica le ha prevalentemente investigate attraverso scenari sacrificali, come il Trolley e il Footbridge dilemma. Nonostante il loro carattere irrealistico, tali modelli hanno contribuito in modo significativo a delineare due principali orientamenti decisionali: uno principle-based (i.e. deontologico), focalizzato sul rispetto delle regole indipendentemente dalle conseguenze, e uno outcome-based (i.e. utilitaristico), orientato alla massimizzazione del benessere complessivo. Il principale limite di questi dilemmi risiede però nel loro scarso realismo. La distanza tra tali scenari e le situazioni decisionali quotidiane può ridurre la validità ecologica dei risultati e limitarne la generalizzabilità, rendendo meno chiaro in che misura i processi osservati riflettano il funzionamento del decision-making morale nella vita reale. Alla luce di tali criticità, il presente studio mira a identificare e analizzare una serie di dilemmi basati su scenari di vita reale, con l'obiettivo di attivare processi decisionali più vicini a quelli che caratterizzano l'esperienza quotidiana. Le risposte dei partecipanti sono state esaminate in un disegno between-subjects, confrontando una condizione di scelta (N = 142; scenari in prima persona) e una condizione di giudizio (N = 142; valutazioni teoriche dello scenario), assegnate a gruppi distinti di partecipanti. I fattori soggettivi associati alle risposte sono stati esplorati attraverso strumenti standardizzati per la valutazione del disimpegno morale (Moral Disengagement), della personalità (Eysenck Personality Questionnaire), della colpa (Moral Orientation Guilt Scale) e delle basi morali (Moral Foundation Questionnaire). I

risultati indicano che, sebbene la prospettiva decisionale (scegliere in 1a persona vs. giudicare la scelta in 3a persona) e alcune caratteristiche individuali possano in parte influenzare le risposte, il fattore maggiormente determinante è rappresentato dal tipo di scenario. In particolare, i partecipanti non mostrano una tendenza stabile verso decisioni principle-based o outcome-based, ma modulano la propria risposta in funzione della specifica situazione. Nel complesso, i risultati evidenziano la natura dinamica e fortemente contestuale dei processi decisionali in ambito morale e sottolineano la necessità di affiancare ai dilemmi tradizionali strumenti più ecologicamente validi, in modo di integrare e chiarire le dinamiche osservate negli studi basati su scenari tradizionali.

4. The Interplay of Reasoning, Emotions, and Beliefs in Real-World Decision-Making

Federica Alfeo¹, Febronia Riggio²

¹ Dipartimento ForPsiCom, Università degli Studi di Bari Aldo Moro

² Department of Cognitive Sciences, University of Messina

Simposio · Reasoning and abstract cognition

Human decision-making results from the ongoing interaction among reasoning processes, emotional responses, and belief systems, which collectively shape individuals' interpretation and evaluation of the world. Gaining a comprehensive understanding of this phenomenon requires examining how these factors develop over time and in relation to contextual or personal variables. The symposium assembles diverse perspectives to investigate how reasoning, beliefs, and emotions influence decision-making. It emphasizes the impact of early experiences on socio-emotional processing and examines how stable individual differences, such as affective dispositions and identity-related characteristics, shape evaluative processes. The symposium also explores how contextual factors, including complex and ecologically valid scenarios with moral dimensions, modulate emotions, judgments, and choices in ways that better reflect everyday decision-making than traditional hypothetical or sacrificial moral scenarios. By integrating theoretical frameworks and empirical findings, the symposium encourages dialogue across research traditions often considered separately. It unites developmental, cognitive, affective, and social perspectives to present reasoning as a situated process shaped by emotional, belief-based, and contextual influences. This integrative approach is essential for advancing understanding of human cognition in real-world contexts.

5. Rethinking Replicability: a Unified Bayesian Framework for Multiple Facets

Ester Alongi¹, Gianmarco Altoè², Giovanni Parmigiani³

¹ Università degli Studi di Padova, dipartimento di Scienze Statistiche

² Dipartimento di Psicologia dello Sviluppo e della Socializzazione, Università degli Studi di Padova

³ Dipartimento di Data Science, Dana-Farber Cancer Institute e Dipartimento di Biostatistica, Harvard T.H. Chan School of Public Health

Intervento in simposio · Methodology

What does it mean to evaluate replicability? Is it merely determining whether results are consistent across studies? Much of the existing literature on replicability draws conclusions exclusively from the comparison of study results. However, replicability is a multifaceted concept that involves additional inferential dimensions. This work introduces a unified and coherent framework in which distinct but related notions of replicability are formally defined and jointly embedded within a single inferential structure. We focus on a Bayesian hierarchical

model, and show how a single replicability analysis can meaningfully address four complementary replicability questions: replicability as traditionally defined in independent studies; inference at the meta-analytic level implied by a common generative model; consistency between individual studies and the shared meta-analytic structure; consistency between an existing body of evidence and a new study arising from the same generative model. We illustrate our framework using real data.

6. AI-Based Conversational Interventions for Home-Based Care: A Systematic Review of Psychosocial Outcomes in Older Adults and Family Caregivers

Luana Amadini Genovese¹, Stefania La Rocca², Lorenzo Reina³, Federico Longoni³, Chiara Pupillo³, Lorenzo Antichi², Asia Orlandi², Giuseppe Riva²

¹ Department of Psychology, Catholic Sacred Heart University - Milan

² Department of Psychology, Catholic Sacred Heart University, Milan

³ Department of Computer Science, University of Pisa

Intervento in simposio · Life cycle (e.g., development and aging)

Despite growing interest in AI-based conversational systems for home-based care, the psychosocial effects of these interventions have been examined separately for older adults and family caregivers, leaving their comparative impact largely unexplored. This study presents preliminary findings from a systematic review examining the psychosocial outcomes of AI and LLM-based conversational interventions delivered in home or community settings to older adults or their family caregivers. Following PRISMA guidelines, a systematic search was conducted across seven databases (PubMed, PsycINFO, Web of Science, Scopus, IEEE Xplore, ACM Digital Library, Cochrane) for the period 2018–2025. Inclusion criteria required studies to involve AI-based or LLM-based conversational systems, report at least one psychosocial outcome, and target older adults or family caregivers in non-institutional settings. Studies employed RCT, pre-post, or observational designs. For older adults, loneliness was the most frequently assessed outcome, with the majority of studies reporting significant reductions, primarily through companionship and social presence mechanisms. Depression outcomes were consistently positive across multiple AI modalities. For family caregivers, the strongest evidence came from LLM-powered psychoeducational interventions, which reduced depression and caregiver burden through gains in self-efficacy and cognitive reappraisal. The comparison between the two targets reveals a structural asymmetry: interventions for older adults are more numerous but methodologically weaker; caregiver-focused interventions are fewer but more theoretically grounded, suggesting that while social presence drives benefit for older adults, structured psychological content appears necessary for meaningful outcomes in caregivers. This asymmetry has direct implications for the design of AI systems intended to support informal care networks.

7. Executive control and neuropsychophysiological markers of vulnerability across the ageing continuum

Martina Amanzio¹

¹ Università degli Studi di Torino, Dipartimento di Psicologia

Intervento in simposio · Emotions and motivation

Ageing is a multidimensional process characterised by the interaction of cognitive, affective, and physiological factors.

Among these, executive control plays a central role in regulating behaviour, supporting self-awareness, and maintaining functional independence across the ageing continuum. Within this framework, Subjective Cognitive Decline (SCD) may represent a possible transitional stage towards Mild Cognitive Impairment (MCI), particularly in the presence of SCD-plus features, although trajectories remain heterogeneous and non-deterministic. This contribution proposes an integrated perspective combining executive control processes, metacognitive awareness, and neuropsychophysiological markers. In particular, recent longitudinal evidence highlights the role of heart rate variability (HRV) as a non-invasive index of autonomic regulation and physiological flexibility. Within the neurovisceral integration framework, HRV reflects the functional integrity of central networks involved in executive control and emotional regulation. Findings suggest that individual variability in autonomic responses, especially under emotionally salient conditions, is associated with cognitive trajectories in older adults with SCD. This supports the view that vulnerability in ageing emerges from the interaction between top-down executive control and bottom-up affective and physiological processes. Overall, this approach contributes to a more comprehensive understanding of early cognitive vulnerability and supports the development of multidimensional assessment models integrating neuropsychological and psychophysiological markers. This framework also opens directions for integrating additional psychophysiological measures in future research.

8. Reciprocal Influence in emotional responses in dyads subjected to a stress task

Iris Amidei¹, Fiorella Del Popolo Cristaldi², Paola Sessa³, Antonio Maffei³

¹ Università degli Studi di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione (DPSS)

² Università degli Studi di Padova, Dipartimento di Psicologia Generale (DPG)

³ Università degli Studi di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione (DPSS)

Poster · Social cognition

Emotional contagion is the spontaneous tendency to share another individual's affective and physiological responses, promoting social connection and coordination. Romantic couples exhibit extensive sharing of emotional states, including stress, though stress contagion remains a relatively underexplored research area. The present study examined physiological stress contagion in romantic dyads subjected to the Trier Social Stress Test (TSST), also investigating the association between relational styles and relationship quality and their moderating role on contagion. Thirty-nine couples (mean age = 27 years) in stable relationships participated in a dyadic version of the TSST, in which one member of the couple (female) was subjected to a socially stressful task (Target member) while their partner observed passively (Observer member). Throughout the paradigm, heart rate was recorded via ECG in both participants. The Experiences in Close Relationships-Revised (ECR-R) was administered to assess relational style, and the Relationship Assessment Scale (RAS) to evaluate relationship satisfaction. In observers, relationship satisfaction showed a negative correlation with the anxious levels ($p = -0.36$) and avoidant ($p = -0.58$) components of relational style. Furthermore, during the TSST anticipation phase, the target's heart rate increase significantly predicted the observer's heart rate increase ($\beta = 0.20$, $p = 0.003$), suggesting emotional contagion. However, neither relational

styles nor relationship satisfaction exerted a significant moderating effect ($p = 0.6$). These results confirm the physiological interconnection between partners during stress, even though this phenomenon does not seem to be moderated by relationship characteristics nor relationship style.

9. Navigating Change: The Impact of Socio-Cognitive Polarization and Psychological Profiles on Decision-Making Processes

Elia Amighetti¹, Elena Turco¹, Paola Iannello¹, Carola Salvi¹, Alessandro Antonietti¹, Alice Canceri¹

¹ Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

Poster · Reasoning and abstract cognition

Contemporary rapid transformations across social, cultural, technological, and economic domains call for a rigorous examination of the mechanisms underlying how people adjust to changes. Individual psychological differences play a critical role in how such changes are perceived and navigated. Across two studies, this research aims to investigate the psychological dimensions influencing decision-making in scenarios involving potential change. Specifically, it explores whether psychological inflexibility reinforces the status quo or, conversely, drives choices that prioritize change when it aligns with an individual's pre-existing worldview. Study 1 ($N=155$) is a preliminary online survey involving decision-making scenarios and the Socio-Cognitive Polarization (SCP) scale, characterized by absolutistic thinking, conservative political tendencies, and xenophobic attitudes. Results show that higher SCP levels significantly predicted decision patterns: participants favored conservative options in social contexts, but preferred progressive changes in technological domains. Study 2 ($N=50$, in-person) builds upon these findings by incorporating overconfidence, intellectual humility, resistance to change, critical thinking. Results show significant differences between progressive and conservative choices, with progressive participants having more positive attitudes toward the subject matters. Particularly concerning gender-neutral language, significant differences emerged in SCP levels regarding acceptance of change - characterized by lower polarization in the progressive group - alongside a trend toward significance with higher intellectual humility among progressive individuals. This research offers insights about how individuals process information and respond to change by delineating the cognitive and social factors that shape decision-making, and provides a novel framework for understanding barriers to - and drivers of - behavioral adaptation in an evolving reality.

10. Rhythm, music, and reading in post-stroke aphasia: Effects of a telerehabilitation intervention

Elia Amighetti¹, Marta Marchioro¹, Alesia Grillo¹, Camillo Marrazz, Annapaola Montini³, Alessandro Antonietti¹, Alice Canceri¹

¹ Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

² Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

³ Fondazione Policlinico Universitario Agostino Gemelli - IRCCS

Intervento in simposio · Language, reading and music

Acquired dyslexia is frequently associated with post-stroke aphasia and is characterized by the impairment of previously intact reading skills. Based on the functional overlap between the neural networks of music and language, music-based interventions have emerged as promising tools for language rehabilitation. Among these, Rhythmic Reading Training (RRT)

is a training program that addresses precision of timing perception through synchronizing speech production during reading to a regular beat. By providing a stable rhythmic accompaniment, RRT offers a temporal framework that serves as a guide for segmenting and structuring the reading of linguistic elements, thereby facilitating word processing and decoding. The objective of this research was to test whether the integration of subjectively preferred music could enhance the effects of RRT in patients with acquired dyslexia. We evaluated whether listening to preferred music influenced the training's efficacy on linguistic (reading speed and accuracy, naming, syllable deletion) and cognitive parameters (auditory and visual attention, and short term and working memory). Fifteen patients (9 males, mean age = 57.85 years) completed a telerehabilitation protocol of 10 daily RRT sessions over two weeks, listening to preferred music either before each session (experimental condition) or after each session (active control), with pre- and post-intervention assessments. Preliminary results indicate improvements in reading (non-word accuracy) and auditory attention from pre- to -post intervention. These findings highlight the potential of innovative neurorehabilitation approaches based on rhythmic synchronization.

11. The interplay between linguistic and perceptual experience in shaping size representation

Giorgia Anceresi¹, Eléonore Giraudet², Oliver Collignon², Luca Rinaldi¹

¹ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

² Crossmodal Perception and Plasticity Lab, Institute of Research in Psychologie (IPSY) and Institute of Neuroscience (IoNS), Université Catholique de Louvain, Louvain-la-Neuve, Belgium

Mini-talk · Memory

Human knowledge arises from the flexible integration of perceptual and linguistic experiences, yet their relative contribution remain debated. Blind individuals provide a model system to test these contributions, as evidence shows that early visual deprivation enhances sensitivity to linguistic distributional patterns. In this context, size knowledge offers a suitable domain to examine the interplay of experiential priors, as it can be in principle considered as a subjective feature shaped by individual experience. Here, we leveraged computational models of linguistic and visual experience along with sensorimotor norms of tactile experience to disentangle the contribution of different priors to size representations, assessing both explicit (i.e., ratings) and implicit (i.e., response times) measures. In Experiment 1, we reanalyzed data from Leth-Steensen et al. (2024), containing size ratings of animals and objects. Results showed that linguistic and visual experiences independently shaped participants' judgments, supporting the idea that size representations emerge from multidimensional traces. In Experiment 2, we tested whether blind and sighted individuals differ in their reliance on linguistic and visual priors and whether this interacts with the level of tactile experience. Participants decided which of two auditorily presented items was larger. Linguistic information influenced chronometric performance only when tactile experience was limited and this effect was enhanced in blind individuals. No significant interactions emerged for visual experience, possibly reflecting differences between explicit and implicit tasks. Overall, these findings show that size representations emerge from the integration of linguistic and perceptual priors, with relative contributions compensatorily modulated by perceptual availability, deepening our understanding of the mechanisms

shaping human semantic knowledge.

12. Post-Selection Inference for Multiverse Analysis in Mixed-Effects Models (PIMAX)

Angela Andreella¹, Anna Vesely²

¹ Ca' Foscari University of Venice, Department of Economics

² University of Bologna, Department of Statistical Sciences

Intervento in simposio · Methodology

Sign-flipping score tests provide robust inference in generalized linear models under variance misspecification and form the basis of two recently proposed inferential frameworks: Post-selection Inference in Multiverse Analysis (PIMA) and the flip2sss two-stage summary statistics approach. PIMA enables valid inference across a multiverse of model specifications with asymptotic control of the family-wise error rate, whereas flip2sss extends the resampling-based score test to longitudinal and hierarchical data settings. In this paper, we unify these two frameworks by extending multiverse inference to contexts involving dependent observations. Heteroscedasticity, unbalanced designs, and within-cluster dependence are accommodated nonparametrically, without requiring specification of a random-effects correlation structure, as is typically assumed in conventional generalized linear mixed models.

13. Higher-Order Composite Modeling for Capability Assessment: Prediction, Importance, and Necessity Beyond Linear Effects

Mario Angelelli¹, José Luis Roldán², Nicolò Gianmauro Totaro³, Massimiliano Gervasi⁴, Enrico Ciavolino¹

¹ University of Salento, Department of Human and Social Sciences and Data Science Research Center

² Universidad de Sevilla, Department of Business Administration and Marketing

³ University of Salento, Department of Innovation Engineering

⁴ University of Foggia, Department of Agricultural Sciences, Food, Natural Resources, and Engineering

Mini-talk · Methodology

Specifying the appropriate level of abstraction in hierarchical psychometric models affects sub-dimension relevance beyond what linear modeling reveals. The present study addresses this issue within the Partial Least Squares Structural Equation Modeling (PLS-SEM) framework applied to a higher-order model of human-related capabilities assessed via expert questionnaire, explaining and predicting perceived organizational performance (N = 114 domain experts). A third-order formative composite operationalizing five second-order dimensions, encompassing measurement and structural model assessment, was compared with a second-order specification within Confirmatory Composite Analysis, with the former yielding better overall model assessment indices (SRMR = 0.042 vs. 0.071; BIC = -47.353 vs. -28.532). Cross-validated predictive assessment showed better predictive performance of the third-order model against linear ($p = .019$) and naive benchmarks ($p = .031$) and smaller prediction loss than the second-order alternative ($p = .057$). Parallel to model comparison, Importance-Performance Map Analysis and Necessary Condition Analysis (NCA) were applied, capturing sub-dimension relevance along two complementary axes: linear sufficiency and non-linear necessity thresholds. Three capabilities emerged as necessary conditions for high performance via NCA permutation testing with significant effect sizes ($p < .010$). Importance and necessity rankings showed partial misalignment, with non-linear

threshold constraints revealing a prioritization not fully captured by linear path effects. These results indicate that higher-order composite specification and multi-criterion importance evaluation integrating sufficiency, necessity, and variance-based importance can inform about distinct aspects of hierarchical models, with practical implications for psychometric instrument use and strategic capability prioritization. Perspectives for further methodological advances are discussed.

14. Verbal memory deficits and cognitive flexibility impairment in Gambling Disorder: evidence from the BFE-A

Laura Angioletti¹, Davide Crivelli¹, Victoria Marino¹, Michela Balconi¹

¹ 1 International Research Center for Cognitive Applied Neuroscience (IrcCAN), Faculty of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy 2 Research Unit in Affective and Social Neuroscience, Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy

Mini-talk · PANEL (no track)

This study investigated the applicability of an executive functions (EF) assessment battery for evaluating cognitive and neuropsychological correlates of addiction in individuals with gambling disorder (GD). The Battery for Executive Functions in Addiction (BFE-A), previously validated in populations with substance use disorders (SUD), has demonstrated sensitivity in detecting EF deficits in SUD compared to healthy controls. The present study aimed to assess whether the BFE-A is similarly effective in identifying EF impairments in GD. A total of 85 patients diagnosed with GD were recruited from ULSS 2 Marca Trevigiana (Addiction Services, Treviso) and SERD di Canzio, Italy, and compared with a demographically matched healthy control group. All participants were administered the BFE-A, which comprises five neuropsychological tests measuring verbal short- and long-term memory, working memory, verbal and non-verbal cognitive flexibility, and focused attention. Analyses were controlled for age and education. Results revealed significant impairments in both immediate and delayed verbal memory in the GD group relative to controls. Although repetition performance did not differ between groups in this test, GD patients exhibited a higher frequency of intrusion errors, indicating reduced executive control. Similarly, in the verbal cognitive flexibility test, GD participants produced significantly more intrusion errors than controls. In the non-verbal cognitive flexibility test, healthy controls outperformed GD patients in both the number of correct responses and strategy index scores. Overall, these findings support the sensitivity of the BFE-A in detecting specific EF deficits in behavioral addictions, extending its validity beyond SUD to GD.

15. The role of emotion dysregulation, impulsiveness and rumination in psychopathology: insight from an Italian sample of adolescents and young adults

Sofia Francesca Aprile¹, Alessandro Rodolico², Chiara Avanzato³, Carmen Concerto³, Ludovico Mineo³, Antonino Petralia³, Filippo Caraci⁴, Maria Salvina Signorelli³

¹ Department of Educational Sciences, Section of Psychology, University of Catania

² Department of Psychiatry and Psychotherapy, Klinikum rechts der Isar, Technical University of Munich

³ Department of Clinical and Experimental Medicine, Psychiatry Unit, University of Catania

⁴ Department of Drug and Health Sciences, University of Catania

Mini-talk · Emotions and motivation

Adolescence and emerging adulthood are high-risk periods for the onset of psychopathology. Emotion dysregulation (ED), impulsiveness, and rumination are transdiagnostic processes implicated across symptom domains, but their relative contributions in clinical youth samples remain unclear. We conducted a retrospective cross-sectional study (November 2022–March 2023) in outpatients aged 16–25 years presenting for first-time psychiatric consultation at a university hospital in Catania, Italy. Participants completed self-report measures of rumination (RRS), impulsiveness (BIS-11), emotion dysregulation (DERS), and psychopathological symptoms (SCL-90-R). Associations were examined using Spearman's correlations and partial correlations to account for potential confounders. Multivariate multiple regression, followed by separate multiple linear regression models for each SCL-90-R dimension, was used to evaluate the predictive utility of rumination, ED, and impulsiveness across symptom dimensions, with FDR correction applied to outcome-specific tests. In our sample ($N = 102$; age = 20.0 ± 2.55), rumination was the most consistent predictor, showing associations with somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, paranoid ideation, psychoticism, and additional symptom items (all $p < .05$), with the largest effect for depression ($B = 0.053$, 95% CI [0.042, 0.064]). ED independently predicted obsessive-compulsive symptoms, depression, anxiety, anger-hostility, and phobic anxiety ($p < .05$). Impulsivity showed narrower associations, predicting anger-hostility and psychoticism ($p < .05$). Findings support a transdiagnostic framework in which rumination and ED broadly relate to symptom severity across domains, whereas impulsivity contributes more selectively. Early assessment and targeted interventions addressing these processes may improve outcomes in youth psychiatric populations.

B

16. Emotions need a face. Evidence for a time-based decay of information in working memory

Davide Baggini¹, Paola Ricciardelli¹, Paola Palladino², Caterina Artuso³

¹ Università degli Studi di Milano-Bicocca

² Università degli Studi di Foggia

³ Università degli Studi di Genova

Poster · Memory

Faces are crucial social stimuli, conveying intentions and affective states. WM plays a key role in processing such dynamic information, but the impact emotions have on it is still debated. The study aimed to clarify how emotion type and task demands affect WM updating. We examined how emotional facial expressions influence working memory (WM) performance, focusing on whether emotional information is maintained differently from facial identity. Fifty-six participants (27 men, 29 women) completed an n-back task with faces expressing happiness, fear, or anger. Participants were required to maintain either facial identity, emotional expression, or both, across three cognitive load levels (1-, 2-, and 3-back). Accuracy and response times were recorded. The design included within-subject factors (feature type and cognitive load) and a between-subject factor (sex). Accuracy decreased as cognitive load increased, confirming the impact of task difficulty. Performance was significantly lower when participants

maintained emotional expressions alone compared to identity or combined conditions. No significant differences emerged between specific emotions (happiness, fear, anger) or participants' sex. Importantly, response time negatively correlated with accuracy, suggesting that slower responses were associated with poorer performance. Emotional information is harder to maintain in WM when not linked to facial identity, indicating that binding emotion to identity facilitates processing. The absence of emotion-specific effects suggests comparable cognitive demands across emotions. Crucially, the negative relationship between response time and accuracy supports a time-based decay of WM information rather than interference-based accounts. These findings contribute to understanding how social and emotional information is maintained in WM.

17. Empathy and prosociality in complex decision-making: behavioral and metacognitive evidence from The Digitalized Assessment for Decision-Making (DASDec)

Michela Balconi¹, **Domenico Gambino**¹, **Elena Donzelli**¹, **Angelica Daffinà**¹

¹ International Research Center for Cognitive Applied Neuroscience (IrcCAN), Università Cattolica del Sacro Cuore, Milan, Italy

Poster · Social cognition

Decision-making in complex situations requires the integration of cognitive, socio-emotional, and metacognitive processes. Individual differences in empathy and prosocial orientation may play a crucial role in shaping behavioral performance. This study investigated these relationships using specific tasks from The Digitalized Assessment for Decision-Making (DASDec), a new tool implemented to assess different dimensions of decision-making, including metacognitive processes such as monitoring, control, and awareness of one's decisions. Twenty-two young adults completed tasks along with measures of empathy (Interpersonal Reactivity Index, IRI; Balanced Emotional Empathy Scale, BEES) and Prosociality (Scala di Prosocialità per adulti e adolescenti). Results revealed converging patterns across components: Risk Assumption and Management Index was positively associated with Prosociality and IRI_total, while BEES_Tendency to Avoid Emotional Involvement was negatively related. Evaluation of Alternatives and Reframing Index was positively associated with IRI_total and IRI_Fantasy, and negatively with BEES_Diffuse Emotional Responsibility. Regarding metacognitive components, Working Memory and Decision Complexity Index and Emotional Decision Propensity were positively associated with IRI_total and prosociality, while IRI_Perspective Taking was negatively related to Automatism Awareness Index and Moral Regulation Index. Higher empathic traits were also associated with greater perceived realism, and Prosociality with perceived personal relevance. Overall, these findings highlight the role of socio-emotional traits in enhancing adaptive decision-making across multiple stages, including metacognitive processes such as monitoring, regulation, and awareness of decision-making, supporting the integration of empathic, prosocial, and metacognitive processes in complex decision-making contexts.

18. Accesso lessicale e processamento parafoveale nella lettura di adulti sordi

Valentina Bandiera¹, **Lisa S. Arduino**², **Roberta Daini**³, **Marialisa Martelli**⁴, **Olga Capirci**⁵, **Pasquale Rinaldi**⁵, **Silvia Primativo**²

¹ Università LUMSA, Dipartimento di Scienze Umane

² Università LUMSA, Roma, Dipartimento di Scienze Umane

³ Università Milano-Bicocca, Milano, Dipartimento di Psicologia

⁴ Università La Sapienza, Roma, Dipartimento di Psicologia

⁵ Istituto di Scienze Cognitive e Tecnologie, Roma

Mini-talk · Language, reading and music

La sordità è associata a una riorganizzazione dell'attenzione visiva extrafoveale che può influenzare i processi di lettura, ampliando lo span percettivo e favorendo l'elaborazione parafoveale. Il presente studio esplora tali meccanismi in adulti sordi segnanti LIS e un gruppo di controllo di udenti. Sono state utilizzate due condizioni sperimentali: 1) decisione lessicale con presentazione foveale (150 ms) di parole di alta e bassa frequenza e non-parole; 2) decisione lessicale con paradigma Rapid Parallel Visual Presentation (RPVP). In questo esperimento venivano presentate per 150 ms coppie di parole semanticamente relate (SR) e non-relate (nSR). Il compito, in questo caso, era sullo stimolo in parafovea. I sordi, come i controlli, mostrano l'effetto lessicalità nella condizione foveale, con tempi di risposta (TR) più lunghi e minore accuratezza per le non-parole rispetto alle parole, e l'effetto frequenza, con prestazioni migliori per parole di alta frequenza. Nel compito parafoveale entrambi i gruppi mostrano un effetto lessicale ed un effetto semantico, con prestazioni migliori per le coppie di parole SR. L'effetto, in termini di TR, è più forte nei sordi rispetto agli udenti. Al contrario, in termini di accuratezza, l'effetto è più forte negli udenti. Nel complesso, i risultati mostrano che anche i lettori sordi sono sensibili all'informazione semantica presentata in parafovea. Questo dato è coerente con l'ipotesi che la sordità si associ ad una efficace distribuzione dell'attenzione visuo-spaziale durante la lettura.

19. EEG signature of explicit and implicit timing in ageing

Jacopo Barbiero¹, **Fiorella Del Popolo Cristaldi**², **Luigi Micillo**², **Giovanna Mioni**²

¹ Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Reggio Emilia, Italy

² Department of General Psychology, University of Padova, Padova, Italy

Intervento in simposio · Space, time and number

Temporal processing is essential for cognitive functioning. Age-related changes in temporal processing are widely reported, but whether they reflect a specific alteration of timing mechanisms or a more general decline in cognitive functioning remains an open question. The specific role of these two factors can be disentangled through the distinction between explicit timing, which involves conscious estimation of durations, and implicit timing, which supports automatic temporal predictions. The present study examined electrophysiological correlates of explicit and implicit timing in young (N=28) and older adults (N=23) using electroencephalography (EEG). Participants performed a time bisection task (explicit) and a foreperiod task (implicit). Neural activity was assessed through event-related potentials (ERPs), focusing on CNV, N1-P2 components, and beta-band modulation. Overall, the results reveal differential effects of aging on explicit and implicit timing. Behavioral evidence indicates a decline in explicit temporal processing in older adults, while implicit temporal processing remains partially preserved. EEG findings showed that older adults did not

exhibit significant modulation of CNV or N1-P2 amplitudes across implicit and explicit tasks. When comparing older and younger adults, the latter displayed larger CNV amplitudes, for supra-second intervals in the explicit task and across all intervals in the implicit task. Moreover, stronger beta desynchronization was observed in younger participants during implicit timing. These patterns suggest that age-related changes might primarily impact cognitively demanding aspects of timing, with explicit processes being more affected, while alterations in neural activity during implicit timing indicate changes in underlying mechanisms despite partially preserved behavioral performance.

20. Emotional Responses to Renaissance Art: Differences Between Venetian and Bohemian Paintings

Samantha Barbolan¹, Ryan Joseph Slaby², Margherita Calderan³, Veronika Knedlíková Wanková³, Marco Bertamini³

¹ Università degli Studi di Padova

² University of Vienna, Department of Cognition, Emotion, and Methods in Psychology

³ University of Padua, Department of General Psychology

Poster · Attention, perception and consciousness

The Renaissance reshaped European art, with new representational strategies gradually spreading unevenly from Italy across Europe (Correa-Herran et al., 2020, Yao, 2024). Alongside these developments, increasing attention was given to the emotional impact of images and how artistic techniques could emphasize it. This shift appears evident in Venetian painting, where pictorial innovations were adopted earlier than in other regions north of the Alps (Kaup, 2018). The study examined forty religious paintings produced between 1550 and 1661, equally divided between the Venetian and Bohemian regions. Among these works, eleven featured chiaroscuro, a technique marked by strong contrasts between light and shadow. A total of 146 participants evaluated the paintings along five emotional dimensions: feeling moved, beauty, pleasure, sadness, and shock. Responses were collected online through a continuous slider scale, where participants could indicate their answers by moving a cursor along a line. The data were analysed using generalized linear mixed-effects models with an ordered beta distribution to account for the response patterns. The results showed that Venetian paintings elicited stronger feelings of being moved, sadness, and shock compared to Bohemian works. Additionally, paintings employing chiaroscuro generated higher ratings of being moved, beauty, pleasure, and sadness. These findings suggest that Renaissance techniques and ideas spread unevenly across Europe, as reflected in the differences between Italian and Bohemian artworks. They also suggest that techniques such as chiaroscuro retain their emotional impact on contemporary viewers, supporting the idea that certain visual mechanisms of aesthetic experience remain effective across time and cultures (Redies, 2015).

21. Dimensions of Embodiment: From Internal Sensations to Concepts and Language

Laura Barca¹

¹ Istituto di Scienze e Tecnologie della Cognizione, Consiglio Nazionale delle Ricerche

Simposio · Language, reading and music

This symposium explores the multifaceted nature of embodied cognition, examining how conceptual knowledge is grounded in

sensory, motor, and internal physiological systems. The contributions trace a dynamic path from the internal bodily state to external action and the biological roots of semantic representation. The session opens with an investigation into situated interoception, showing that conceptual boundaries—particularly for abstract words—are not static but are dynamically reshaped by an individual's internal physiological state, such as pregnancy. Following this internal perspective, the focus shifts to the role of inner speech as a form of "inner embodiment". This silent verbalization is shown to be a critical cognitive tool for processing abstract and vague concepts that lack direct physical referents. The symposium then addresses the impact of external physical engagement, presenting evidence that observing gestures in virtual reality facilitates language acquisition by leveraging the motor system to anchor new vocabulary. Finally, a comparative perspective using intracranial recordings in non-human primates shows that the distributional properties of language mirror high-level visual categorical partitions already present in the brain. This suggests that language reflects a fundamental compression of perceptual information grounded in the visual stream. Together, these studies highlight how meaning is a situated process rooted in the interaction between the body's internal states, its external actions, and its evolutionary heritage.

22. Situated Interoception: Dynamic Shifts in Conceptual Representation

Laura Barca¹

¹ Istituto di Scienze e Tecnologie della Cognizione, Consiglio Nazionale delle Ricerche

Intervento in simposio · Language, reading and music

Conceptual knowledge is traditionally viewed as grounded in exteroceptive experience. However, the role of internal bodily signals (interoception) in conceptual representation remains a frontier in embodied cognition. Building on previous evidence regarding the multidimensional nature of concepts, this talk investigates the interoceptive grounding of abstract and concrete words, exploring how conceptual boundaries are dynamically recalibrated by the individual's physiological state. I will present a series of studies integrating behavioral dynamics and subjective ratings. Study 1 employs a mouse-tracking interoceptive-exteroceptive categorization task on the general population, revealing that concrete-natural concepts trigger an implicit motor activation of interoceptive features, suggesting a graded rather than binary grounding. Study 2 explores how these representations are reshaped during pregnancy—a period of profound physiological transition. A rating study conducted during the third trimester revealed an "interoceptive shift," with pregnant women attributing higher interoceptive and emotional value to abstract concepts and higher Body-Object Interaction to concrete ones. Study 3 shows that this shift is reflected in real-time cognitive dynamics: the same categorization task of Study 1 showed that pregnant women exhibit a significantly stronger attraction toward the interoceptive response for both philosophical and natural concepts. This effect persisted after controlling for interoceptive accuracy, suggesting a semantic re-weighting driven by the pregnant women's physiological state. Together, these findings suggest that conceptual boundaries are not static but are dynamically shaped by the interaction between a word's semantic properties and the individual's internal bodily state. This highlights the situated nature of conceptual knowledge, which adapts to reflect the concurrent bodily experience.

23. Seeing Together: Effects of Joint Action on Serial Dependence in Perceptual Decisions

Jacopo Bariero¹, David Pascucci², Yury Markov³, Sandro Rubichi¹, Cristina Iani⁴

¹ Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Reggio Emilia, Italy

² Psychophysics and Neural Dynamics Lab, Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland

³ Department of Psychology, Goethe University Frankfurt, Frankfurt am Main, Germany

⁴ Department of Surgery, Medicine, Dentistry and Morphological Sciences with interest in Transplant, Oncology and Regenerative Medicine, University of Modena and Reggio Emilia, Reggio Emilia, Italy

Poster · Attention, perception and consciousness

Serial dependence, where visual judgments are systematically biased by recent perceptual history, has mainly been studied in individual settings. In joint action contexts, however, individuals may also represent their partner's actions and decision history, potentially leading to shared perceptual decision-making processes. In the present study, we investigated the role of joint action in serial dependence. Participants performed an orientation reproduction task, either with another human agent or with a computer, viewing the same stimulus and taking turns reproducing it. In Experiment 1, we found serial dependence regardless of whether the co-agent was human or a computer. In the computer condition, however, the effect was larger when the participant responded in consecutive trials. Additionally, response precision increased when participants performed the task with a human co-actor compared to a computer. In Experiment 2, we assigned different response tools to the participant and the co-actor to disentangle response-related effects. We replicated the increase in precision observed in the joint human condition. In addition, we found that the bias was modulated by the type of response tool only when the same participant responded on consecutive trials. Taken together, these results suggest that social interaction with a human co-actor enhances precision in stimulus encoding, whereas serial dependence can extend across agents. Moreover, a component of serial dependence associated with stimulus–response mapping appears to remain individual-specific.

24. Age-related differences in attentional mechanisms: the role of proactive control and distractor filtering

Ilaria Baroni¹, Roberta Daini², Marco Petilli², Carlotta Lega³

¹ Università degli Studi di Milano-Bicocca

² Università degli Studi Milano-Bicocca

³ Università di Pavia

Poster · Life cycle (e.g., development and aging)

Cognitive aging is commonly associated with increased distractibility, often attributed to a decline in top-down inhibitory control. However, other mechanisms such as selection history and proactive control can have a role in changing the efficiency of attentional allocation. The present study examined age-related differences in the efficiency in proactive control by anticipating distractor occurrence or by filtering distractors. 65 older and 62 younger adults were requested to press a left or a right key, according to the position of a target stimulus in a visual search task. The Distractor Context Manipulation (DCM) paradigm was applied, characterized by blocks without distractors (pure), blocks with distractors and mixed blocks. Linear mixed-effects analyses revealed that older adults showed greater interference in distractor-present blocks, indicating reduced baseline filtering efficiency. Critically, in

mixed blocks, they exhibited a significantly larger context-driven “mixed cost” on distractor-absent trials, suggesting an increased reliance on proactive control that is cognitively demanding. Trial-level analyses further revealed age differences in cognitive flexibility. While younger adults rapidly disengaged proactive control during sequences of distractor-absent trials, older adults displayed pronounced task-set inertia, maintaining a conservative and slower response strategy even when distraction was unlikely. These findings suggest that increased distractibility in aging is not due to an impaired ability to anticipate interference. Rather, older adults rely on a rigid and over-stabilized proactive control mode. Although this strategy may help maintain performance under uncertainty, it leads to persistent carry-over costs and fails to fully prevent attentional capture, reflecting an age-related limitation in flexible criterion adjustment.

25. Tocco affettivo ed esclusione sociale: effetti sulla reattività fisiologica nella prima infanzia

Giada Basset¹, Ermanno Quadrelli², Orsola Faré³, Chiara Turati², Hermann Bulf²

¹ Dipartimento di Psicologia, Università degli Studi di Milano-Bicocca

² Dipartimento di Psicologia, Università degli Studi di Milano-Bicocca / NeuroMI, Milan Center for Neuroscience

³ Dipartimento di Studi Linguistici e Culturali Comparati, Università Ca' Foscari Venezia

Intervento in simposio · Social cognition

Nell'infanzia, il tocco affettivo svolge un ruolo cruciale, sostenendo lo sviluppo socio-emotivo e la regolazione dello stress. Tuttavia, le evidenze empiriche circa l'effetto del tocco in situazioni socialmente stressanti, quali l'ostracismo (esclusione sociale), sono ancora limitate, nonostante la sensibilità all'ostracismo sia dimostrata precocemente sia a livello comportamentale che a livello fisiologico. Questo studio ha indagato come il tocco affettivo e non affettivo, rispetto a una condizione senza tocco, moduli le risposte fisiologiche all'ostracismo nell'infanzia. Bambini di 13 mesi hanno partecipato a un gioco triadico di lancio della palla con due sperimentatrici, con una fase iniziale di inclusione (baseline, primi 6 lanci) e una di ostracismo (sperimentale, ultimi 12 lanci). Successivamente, ricevevano sull'avambraccio, dal caregiver, un tocco affettivo, non affettivo (tapping) o nessun tocco, mentre osservavano un video neutro. Per indagare la reattività fisiologica, è stato registrato il battito cardiaco di bambini e caregiver. Le analisi preliminari (N = 39 bambini) indicano un effetto della fase sperimentale sulla RMSSD, marginalmente significativo ($p = .087$). Analisi esplorative suggeriscono una diminuzione della RMSSD dalla baseline all'ostracismo, indicando maggiore stress, e un successivo incremento nei bambini che ricevevano tocco (affettivo e non), ma non nella condizione senza tocco. A livello comportamentale, si è osservata durante la fase di ostracismo una riduzione dell'emotività positiva e un aumento di quella negativa e del coinvolgimento attivo ($ps < .001$). Le analisi sui caregiver sono in corso. Il tocco sociale sembra supportare la regolazione fisiologica nei bambini dopo un episodio di ostracismo, evidenziandone il ruolo nello sviluppo socio-emotivo precoce.

26. The Impact of Behavioural Training on Plant Awareness Disparity in Numerosity Estimation

Luca Battaglini¹, Andrea Ghiani², Marco Roccato², Ambra Perugini³, Ines Haka², Marco Bertamini², Silvia Guerra²

¹ *Dipartimento di Psicologia Generale*

² *Department of General Psychology, University of Padova, Italy*

³ *Department of Developmental Psychology and Socialisation, University of Padova, Italy*

Mini-talk · Attention, perception and consciousness

Although plants account for the vast majority of Earth's biomass, they are routinely overlooked and undervalued by humans — a cognitive tendency referred to as Plant Awareness Disparity (PAD). This bias extends to elementary cognitive operations, including numerosity estimation, wherein individuals systematically undercount plant stimuli relative to animals and inanimate objects. Whether such a bias is amenable to attenuation through repeated behavioural training, however, remains an open question. To address this, 54 participants performed an identical numerosity estimation task over five experimental sessions, in which they estimated the quantity of briefly displayed images belonging to three semantic categories: animals, minerals, and plants. Training-related effects for each category were examined through mixed-effects models applied to participants' estimation errors. A pronounced practice effect was observed between the first and second session across all stimulus categories. Importantly, plant stimuli were systematically underestimated relative to both animals and minerals throughout all sessions. Despite an overall improvement in performance across sessions, training failed to reduce the plant-specific underestimation bias, suggesting that PAD is resistant to short-term behavioural intervention. These findings are consistent with PAD reflecting a stable, higher-order cognitive and semantic bias rather than a low-level perceptual constraint, implying that effective strategies to counteract PAD should primarily address semantic knowledge of plants, rather than relying on mere exposure or repeated practice.

27. Lateralization of cognitive and emotional abilities: a photobiomodulation (PBM) study using a functional near infrared spectroscopy (fNIRS) device

Michela Battiante¹, Tiziana Quarto¹, Madia Marika Biasi¹, Matteo Martini¹

¹ *Università degli Studi di Foggia*

Poster · Emotions and motivation

An ongoing debate concerns the possible lateralization of determined cognitive abilities and emotional processing. Brain stimulation studies offer a unique opportunity to test lateralization hypotheses. Recently, one study has shown that fNIRS devices could be used to enhance brain functioning through a biochemical process known as PBM. In this study our aim was twofold: to confirm the possible photobiomodulatory potential of a fNIRS device and to test the purported lateralization of specific cognitive/emotional abilities in the prefrontal cortex (PFC). Sixty-six healthy subjects were considered, allocated to three groups: either receiving stimulation over the right PFC, the left PFC or receiving no stimulation (controls). Two working memory tasks (spatial n-back and reading span) and an emotional categorization task were administered twice. The fNIRS device was placed on the forehead of all subjects after the first round of tests. Subjects were stimulated ('right' and 'left' groups) for 8 minutes before

the second testing and for its whole duration. Our results show that the stimulation over the right PFC reduced reaction times between the two sessions for high-dominance negative stimuli, while left PFC stimulation increased Reading Span scores, confirming hemisphere-specific efficiency for emotional and verbal domains. These findings demonstrate the selective efficacy of photobiomodulation in enhancing lateralized cognitive and affective-related functions, and confirm that fNIRS devices can be used to boost brain functionality and should not be relegated to signal recording. Our results could help brain-stimulation rehabilitative interventions in finding better stimulation practices.

28. EEG frequency tagging reveals neural signatures of automatic phonetic discrimination

Martina Battista¹, Francesca Collesse¹, Maria Vittoria Bonfiglio¹, Chiara Battaglini², Linda Polka³, Marta Fantoni⁴, Davide Bottari¹

¹ *IMT School for Advanced Studies Lucca, Italy*

² *Scuola Universitaria Superiore Pavia, IUSS, Italy*

³ *School of Communication Sciences and Disorders, McGill University, Montreal, Canada*

⁴ *Burlo Garofolo Hospital, Trieste, Italy*

Poster · Language, reading and music

The human brain shows marked plasticity during development, and early exposure to speech shapes phonetic sensitivity. From early life, infants discriminate a wide range of phonemic contrasts, and become progressively attuned to their phonemic repertoire, showing enhanced sensitivity to native contrasts. Phoneme discrimination is also modulated by language-specific acoustic and articulatory features of each phonemic category: phonemes that differ across multiple features are easier to discriminate than acoustically similar ones. Accordingly, consonant discrimination difficulty is considered hierarchically organized as a function of articulatory and phonological distance. A standardized electrophysiological measure extracting objective signatures of phonetic categorization could test this hierarchy at the neural level and support early language assessments. To this end, in Experiment 1, we assessed discrimination accuracy of syllable pairs differing in consonant type. The same stimuli were used in Experiment 2 to test automatic neural discrimination with an EEG frequency-tagging paradigm. Syllables were presented at 3.333 Hz, with consonant-varying oddballs at 1.111 Hz. To test whether graded discrimination and a contrast hierarchy generalized under increasing variability, we implemented low-, intermediate- and high-variability conditions: one speaker/fixed vowels, randomized speakers/fixed vowels, and one speaker/randomized vowels. Experiment 1 confirmed accurate discrimination of native syllable contrasts. Experiment 2 showed significant neural responses at the oddball frequency, whose amplitude varied across phonetic contrasts in line with their articulatory and phonological properties, indicating automatic phonetic discrimination and a hierarchy preserved across conditions. Overall, our findings suggest that EEG frequency-tagging may support future linguistic assessments, especially in early ontogeny.

29. Livelli di attività e inattività fisica: il ruolo mediatore della mindfulness disposizionale nella regolazione emotiva

Giulia Belluardo¹, Stefano Isolani¹, Silvia Cerolini¹, Debora Meneo¹, Chiara Baglioni², Paola De Bartolo³

¹ Dipartimento di Scienze Umane, Università Guglielmo Marconi, Roma, Italia

² Department of Psychiatry and Psychotherapy, Medical Center

, University of Freiburg, Faculty of Medicine, Freiburg, Germany

³ Dipartimento di Scienze Umane, Università Guglielmo Marconi, Roma, Italia; Laboratorio di Neurofisiologia sperimentale e del comportamento, IRCCS Fondazione Santa Lucia, Via del Fosso di Fiorano 64, 00143, Roma, Italia

Mini-talk · Health, sport and wellbeing

Gli studenti universitari rappresentano una popolazione a rischio di sedentarietà, anche a causa delle prolungate ore di studio. La letteratura evidenzia una stretta relazione tra livelli di attività fisica e benessere psicologico; tuttavia, i meccanismi sottostanti restano in parte inesplorati. Il presente studio indaga la relazione tra livelli di attività/inattività fisica e regolazione emotiva in un campione di studenti universitari, esaminando il ruolo mediatore della mindfulness disposizionale. Sono stati reclutati 906 studenti universitari. I livelli di attività/inattività fisica sono stati indagati tramite IPAQ, la regolazione emotiva con il CER-Q e la mindfulness con la MAAS. È stata applicata la Path Analysis per verificare relazioni dirette e modelli di mediazione per testare gli effetti indiretti. La Path Analysis ha rivelato che la camminata predice significativamente una maggiore riconsiderazione positiva e una minore catastrofizzazione; al contrario, la sedentarietà è associata a incremento della catastrofizzazione e a ripianificazione. I modelli di mediazione identificano la mindfulness come mediatore: elevati livelli di sedentarietà riducono la mindfulness, la quale a sua volta predice un aumento di strategie disfunzionali (ruminazione, catastrofizzazione, autocolpevolizzazione e colpevolizzazione altrui) e una riduzione di strategie adattive (riconsiderazione positiva e messa in prospettiva). La sedentarietà rappresenta un fattore di rischio per la disregolazione emotiva attraverso la riduzione della consapevolezza. Quest'ultima si configura come una risorsa per mitigare l'impatto di uno stile di vita statico come quello degli studenti universitari, suggerendo la promozione del movimento come processo essenziale per una sana regolazione emotiva.

30. Beyond Speech: Multimodal Communication across Prediction, Interaction, Development and Adaptation

Stefania Benetti¹, Giorgio Piazza², Alessandra Federici³, Matilde Barucci¹

¹ CIMEC, University of Trento

² Trinity College Dublin, University of Dublin

³ MoMiLab, IMT Lucca

Simposio · Language, reading and music

Human communication extends far beyond speech, relying on the integration of multisensory signals and on the ability to predict others' actions and intentions in real time. Despite decades of research, current models remain largely speech-centric and often fail to capture the dynamic, multisensory, and socially embedded nature of communication. This symposium addresses this gap by bringing together interdisciplinary perspectives to investigate multimodal communication across prediction, interaction, development, and adaptation. The first contribution (Piazza et al.) examines how

the brain predicts visual speech, focusing on anticipatory processing of mouth movements to support comprehension under multisensory conditions. The second talk (Federici et al.) examines how early sensory experience shapes the neural encoding of phonetic categories in children, showing that visual speech can support phonetic attunement in the absence of early auditory input. Building on this, the second talk (Benetti et al.) characterizes the neural pathways supporting the integration of audiovisual signals into communicative actions and intentions during face-to-face interaction. Finally and shifting to development, the third contribution (Barucci et al.) demonstrates how hand gestures act as socio-affective scaffolds in infant daycare settings, supporting early communicative development and social engagement. Together, these contributions move beyond traditional speech-centric models by framing communication as a fundamentally multimodal, predictive, and adaptive process embedded in social interaction. By integrating perspectives from cognitive neuroscience, psycholinguistics, and developmental science, this symposium aims to contribute towards a more comprehensive account of how humans process communicative interactions, and to foster new directions for research on multimodal communication and its application.

31. Rethinking Language Processing: A Multimodal, Distributed Framework for Face-to-Face Communication

Stefania Benetti¹, Ambra Ferrari², Giuseppe Rabini³, Giulia Mazzi³, Mirko Tommasini⁴, Maria Laura Mencaroni⁵, Giulia Lung², Shixuan Wang⁶, Chiara Valzoler³

¹ CIMEC, University of Trento

² Scuola Internazionale Superiore di Studi Avanzati, Trieste

³ CIMEC, University of Trento, Trento

⁴ DIPSCO, University of Trento, Trento - MS Centre, SS. Annunziata University Hospital, Chieti, Italy

⁵ DIPSCO, University of Trento, Trento

⁶ Université de Lorraine

Intervento in simposio · Language, reading and music

Face-to-face communication requires the brain to rapidly bind multiple, partially asynchronous signals—such as speech, mouth movements, gaze, and facial expressions—into coherent communicative events, while segregating unrelated inputs. However, dominant models of language processing remain largely speech-centric and do not explain how such multisensory binding and selection are achieved. Here, I present converging evidence from a series of neuroimaging and behavioural studies supporting the existence of a lateral processing pathway (LPP) underlying multimodal language processing. Using representational similarity analysis of fMRI data, we show that phonological representations are shaped by multisensory interactions across a distributed network spanning early sensory, multimodal, and motor regions, challenging purely auditory accounts of speech processing. Combining psychophysics, computational modelling, and fMRI, we demonstrate that audiovisual integration follows Bayesian causal inference principles, with a stronger prior to bind communicative signals. Critically, this effect emerges in dorso-lateral visual and auditory regions, including hMT and TVA, suggesting the involvement of a lateral multisensory pathway sensitive to socially relevant cues. Finally, multivariate fMRI findings reveal that vocal and facial information are encoded and flexibly integrated along this pathway, converging in the posterior superior temporal sulcus, where integration is modulated by cue semantic congruency and propagates to language and control networks. Together, these results support

a model in which the LPP acts as a perceptual gate, binding coherent communicative signals while filtering irrelevant inputs and feeding forward to an extended social and language network. This framework re-conceptualizes language processing as a distributed, predictive, and interaction-driven process.

32. Dalla riabilitazione alla teranostica: validazione del Weighted Score come indicatore digitale del funzionamento cognitivo

Sara Bernini¹, Alice Valcarengi², Silvana Quaglini³, Tomaso Vecchi⁴, Silvia Panzarasa³, Alfredo Costa⁴, Sara Bottioli⁴

¹ IRCCS Fondazione Mondino, Pavia, Italia

² Dipartimento di Psicologia, Università "G. d'Annunzio" di Chieti-Pescara, Chieti, Italia

³ Dipartimento di Ingegneria Industriale e dell'Informazione, Università di Pavia, Pavia, Italia

⁴ Dipartimento del Sistema Nervoso e del Comportamento, Università di Pavia, Pavia, Italia; IRCCS Fondazione Mondino, Pavia, Italia

Mini-talk · Life cycle (e.g., development and aging)

La tecnologia ha permesso la creazione di soluzioni digitali per il trattamento dei disturbi cognitivi nell'anziano. Il nostro gruppo di ricerca ha sviluppato una piattaforma di training cognitivo computerizzato, fruibile in presenza e da remoto, che genera automaticamente un indice sintetico di prestazione cognitiva "Weighted Score" (WS). Lo studio si propone di valutarne la validità come marcatore digitale del funzionamento cognitivo, verificando sia l'associazione con misure neuropsicologiche standard, sia la capacità di discriminare sottogruppi clinicamente differenti. Ottantaquattro anziani con disturbo cognitivo soggettivo, neurocognitivo lieve e maggiore ($Metà=72.01\pm6.65$), sono stati sottoposti a valutazione neuropsicologica basale e a training cognitivo computerizzato. MMSE e MoCA sono stati considerati misure di funzionamento cognitivo globale; gli altri test neuropsicologici sono stati aggregati in domini cognitivi. Un WS globale e WS dominio-specifici sono stati ottenuti dalla prima seduta di training. Sono state condotte analisi di correlazione e analisi di cluster. Le correlazioni mostrano associazioni significative tra WS globale e MMSE ($p=0.286$, $p=.009$) e MoCA ($p=0.422$, $p<.001$), nonché tra WS dominio-specifici e domini corrispondenti. Le analisi di cluster, condotte sulle performance ai test nei vari domini, hanno identificato profili distinti: 3 cluster per memoria episodica e funzioni esecutive, 2 per memoria di lavoro, attenzione/velocità e cognizione globale. I cluster differiscono significativamente nei corrispondenti WS (memoria: $\chi^2(2)=9.16$, $p=.010$; funzioni esecutive: $\chi^2(2)=31.6$, $p<.001$; attenzione/velocità di elaborazione: $\chi^2(1)=9.26$, $p=.002$; cognizione globale: $\chi^2(1)=10.50$, $p=.001$). Questi risultati indicano che il WS riflette il livello di funzionamento cognitivo e discrimina sottogruppi clinicamente differenti, supportandone l'utilità come indicatore digitale con potenziali applicazioni riabilitative e teranostiche.

33. Beyond Adversity: The Role of Positive Experiences in Early Life

Erica Berretta¹, Martina Rizzuti¹, Laura Petrosini², Francesca Gelfo¹

¹ Università degli Studi Guglielmo Marconi, Department of Human Sciences IRCCS Fondazione Santa Lucia, Laboratory of Experimental and Behavioral Neurophysiology

² IRCCS Fondazione Santa Lucia, Laboratory of Experimental and Behavioral Neurophysiology

Mini-talk · Life cycle (e.g., development and aging)

Research on early-life experiences has traditionally focused on adversity and its long-term negative consequences. However, growing evidence highlights the role of positive experiences (PEs) in shaping developmental trajectories. This work addresses conceptual and methodological challenges posed by this field of study, by analyzing the available literature. First, we observe that PEs are conceptualized as both promotive factors - enhancing well-being - and protective factors - buffering the effects of adversity. Drawing on frameworks such as Positive Childhood Experiences, Benevolent Childhood Experiences, and the HOPE model, PEs are defined as multidimensional constructs encompassing supportive relationships, enriching environments, social engagement, and emotional development. Evidence links PEs to better physical health, cognitive functioning, and reduced psychopathology across the lifespan. Second, we review retrospective assessment tools, highlighting their utility and limitations, including cultural bias and reduced developmental sensitivity. Third, we examine emerging experimental approaches aimed at investigating and promoting PEs. Overall, this investigation advances a neurodevelopmental perspective. PEs are most impactful during periods of heightened neuroplasticity, particularly in early childhood. However, neuroplasticity is a heterosynchronous, lifelong process, with neural systems maturing at different rates. Thus, the impact of PEs depends on their timing and interaction with developmental windows and individual neurobiological profiles. Adversity, positive experiences, and socioeconomic conditions may also shape the tempo of neurodevelopment, with accelerated maturation linked to adversity and more prolonged trajectories associated with supportive contexts. These findings support developmentally timed, person-centered interventions that leverage sensitive periods of plasticity, as well as culturally valid, developmentally sensitive retrospective tools.

34. Integrating past and present: serial dependence in auditory time perception

Jessica Bertolasi¹, Davide Esposito², Nicola Domenici³, Monica Gori²

¹ Università degli Studi di Genova, DIBRIS

² U-VIP: Unit for Visually Impaired People, Istituto Italiano di Tecnologia

³ Applied Cognitive Psychology, Ulm University

Intervento in simposio · Attention, perception and consciousness

Perceiving time accurately is essential for interacting with the environment, yet temporal perception is inherently noisy and subject to contextual influences. One mechanism that promotes perceptual stability over time is serial dependence, the tendency for current perceptual judgments to be biased toward recently encountered stimuli. While extensively documented in vision, its role in auditory temporal perception remains poorly understood. In this study, we investigated whether and how recent auditory experience shapes the perception of duration. Participants performed a temporal discrimination task in which they compared two intervals, while an intermediate, task-irrelevant stimulus (inducer) was used to elicit serial dependence. We manipulated both the format of temporal information (empty vs. filled intervals) and the temporal gap between inducer and test stimulus (short vs. long inter-stimulus intervals, ISI). Results revealed robust serial dependence effects in auditory time perception, with perceived duration systematically biased toward the inducer. Crucially, this effect was independent of stimulus format but strongly modulated by temporal proximity: it emerged at short ISI and disappeared at longer ones. These findings suggest that auditory temporal perception is shaped by recent sensory history through a

temporally constrained integration process. More broadly, this supports the idea that perceptual decisions are not solely based on current input but reflect an ongoing integration of past and present information, with important implications for understanding how expectations influence perception and decision-making.

35. Structural complexity selectively impairs change detection in natural but not urban scenes

Massimo Bertoli¹, Lidia Teresa Niglia¹, Marcella Brunetti¹

¹ Università G. d'Annunzio di Chieti-Pescara

Mini-talk · Attention, perception and consciousness

Natural and urban environments differ not only in content but in the statistical structure of their visual input. Natural scenes exhibit scale-invariant fractal properties well-matched to the human visual system, and mid-range fractal complexity has been linked to aesthetic preference and physiological restoration. Whether this correspondence extends to basic attentional performance remains unaddressed. We examined whether structural complexity, quantified by a composite index combining edge-based fractal dimension and spectral slope (D_{combined}), modulates change detection in natural versus urban scenes. Thirty participants completed a flicker paradigm crossing Environment (Natural, Urban) with Complexity (Low, Mid, High) in a within-subjects design. Detection accuracy, response times, and time-to-detection were analyzed with mixed-effects models and a Royston–Parmar survival model with a time-varying term for Environment. In natural scenes, both low and high complexity reduced detection hazard relative to mid, with the high-complexity penalty substantially larger ($HR = 0.61$, $p < .001$) and the low-complexity effect smaller but present in reaction time. Urban scenes showed no such gradient: detection was robust across all levels, with both deviations from mid complexity compensated relative to Natural. The time-varying term confirmed that urban advantage was concentrated in the early detection phase, consistent with local segmentation rather than global integration. These results extend the mid-fractal optimality hypothesis from preference to attentional function, and support coherence theory by showing structural complexity selectively disrupts change detection in environments dependent on global integration. The functional optimality of mid-range natural complexity may represent a low-level perceptual pathway linking scene statistics to restorative experience.

36. Neural correlates of Emotional Face Processing in Elderly Adults

Madia Marika Biasi¹, Veronica Debora Toro¹, Gianluigi Serio², Paola Palladino², Tiziana Quarto²

¹ Department of Mental and Physical Health and Preventive Medicine, University of Campania 'Luigi Vanvitelli'; Department of Humanities, University of Foggia

² Department of Humanities, University of Foggia

Intervento in simposio · Emotions and motivation

Emotional processing and its neurophysiological correlates are shaped by an individual's emotional characteristics and experiences, influencing the early perceptual and later evaluative stages of emotional responses. This effect in younger adults is often characterised by early perceptual hyper-reactivity and reduced evaluative engagement, particularly with positive stimuli. However, less is known about these mechanisms in elderly adults. The study examined neural responses to emotional facial expressions in a sample of

healthy elderly adults. Twenty participants (9 M) (Mean age: 61.65; SD: 5.96) completed an emotional categorisation task while electroencephalographic (EEG) activity was recorded. Event-related potentials (ERPs) associated with early perceptual processing (P100, N170) and later evaluative engagement (LPP) were examined. The results show a significant effect of emotional valence at the LPP level, with reduced neural responses to neutral expressions compared to emotional ones. No evidence was found for early perceptual components. These findings suggest an age-related shift in neural processing, with later evaluative stages playing a more prominent role than early perceptual mechanisms. This pattern may reflect a change in age-related motivational priorities, in which emotional processing is less dependent on automatic mechanisms and more oriented to the in-depth evaluation of stimuli. Older adults may tend to prioritise emotional regulation and well-being, which may lead to a reduced need for rapid responses in favour of later, more controlled processing. This study contributes to a better understanding of affective processing in ageing, highlighting the importance of the neural dynamics of later stages in shaping responses to emotional stimuli.

37. Homesickness and Well-Being in Out-of-Home Students: The Role of Place Attachment

Federica Biassoni¹, Marianna Matarres¹,

¹ Dipartimento di Psicologia, Università Cattolica del Sacro Cuore

Mini-talk · Health, sport and wellbeing

The transition from home to university is widely regarded as a positive developmental milestone that fosters autonomy; however, it may also be experienced as stressful due to abrupt environmental and social changes. Research on place attachment has highlighted the psychological challenges associated with relocation (Bogdan et al., 2012). This study examines the relationships among homesickness, place attachment, and well-being in out-of-home university students, while also exploring their subjective experiences and adaptive strategies following relocation. A mixed-methods design was employed. Quantitative data were collected through a survey including five scales: PWB (Ryff & Keyes, 1995); Place Attachment Questionnaire (Hidalgo & Hernandez, 2001); Homesickness Vulnerability Questionnaire (Scopelliti & Tiberio, 2010); Italian TEIQue Short Form (Di Fabio & Palazzeschi, 2011); Cognitive Flexibility Inventory (Dennis & Vander, 2010), administered to 128 students across Italy. Qualitative data were gathered via semi-structured interviews with 20 participants and coded according to content analysis. Findings indicate that stronger attachment to places of origin are associated with higher levels of homesickness. At the same time, attachment to places of origin is positively related to well-being. With regard to post-relocation adaptation strategies, qualitative data reveal that the newly established bond to the destination city does not replace the original one; rather, it coexists alongside it. The present study confirms the view of place attachment as multidimensional construct. In particular, place attachment can be understood as a cumulative phenomenon: when individuals relocate to a new place, the attachment they develop does not replace prior attachments, but rather adds to them. References Bogdan, C., Rioux, L., & Negovan, V. (2012). "Place attachment, proactive coping and well-being in university environment". *Procedia – Social and Behavioral Sciences*, 33, 865-869. Dennis, J. P., & Vander Wal, J. S. (2010). "The cognitive flexibility inventory: Instrument development and

estimates of reliability and validity". *Cognitive Therapy and Research*, 34, 241-53. Di Fabio, A., & Palazzeschi, L. (2011). Proprietà psicometriche del trait emotional intelligence questionnaire short form (TEIQue-SF) nel contesto italiano. *Counseling*, 4, 327-336. Hidalgo, M. C., & Hernandez, B. (2001). "Place attachment: conceptual and empirical questions". *Journal of Environmental Psychology*, 21, 273-281. Ryff, C. D., & Keyes, C. L. M. (1995). "The structure of psychological well-being revisited". *Journal of Personality and Social Psychology*, 69(4), 719-727.

38. Metric expectations drive auditory-motor connectivity: a combined TMS-EEG study

Federica Biondi¹, **Giorgio Lazzari**², **Eleonora Arrigoni**³, **Virginia Penhune**⁴, **Alberto Pisoni**³, **Carlotta Lega**⁵

¹ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy; IUSS School for Advanced Studies, Pavia, Italy

² Psychology Department, University of Montreal, Montreal, Canada
Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

³ Psychology Department, University of Milano-Bicocca, Milano, Italy

⁴ Psychology Department, Concordia University, Montreal, Canada

⁵ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

Mini-talk · Language, reading and music

When participants imagined a binary or ternary meter (i.e., march or waltz) while listening to a non-accented tone sequence, sustained Electroencephalography (EEG) responses aligned not only with the auditory input but also with the imagined metrical structure, suggesting rhythmic processing is influenced by temporal predictions. Motor regions, specifically the dorsal premotor cortex (dPMC) (Lazzari et al., 2025), are critical for generating such timing predictions. However, dPMC cortical excitability during perceived or imagined metric expectation remains unexplored. To address this, we combined Transcranial Magnetic Stimulation and Electroencephalography (TMS-EEG) to sample dPMC cortical excitability and its connectivity with auditory regions during meter perception and imagery. Participants first listened to sequences of accented and non-accented sounds in the form of a binary or ternary meter (perception phase), then imagined the same metrical structure while listening to non-accented sounds (imagery phase). Single-pulse TMS was delivered to the right dPMC or to a control site (right secondary visual cortex) 200 ms before real or expected accented or not-accented sounds, probing cortical excitability during metric temporal expectation. Results showed increased cortical response preceding accented relative to non-accented beats in both perception and imagery phases, indicating greater dPMC reactivity when metric expectations were stronger. Moreover, N100 and P200 components were larger before accented compared to not-accented beats in both experimental conditions. Overall, these findings provide causal evidence that the dPMC contributes to generating temporal predictions underlying metrical structure, with similar predictive mechanisms operating both when the rhythmic structure is externally driven and internally generated through imagery.

39. Executive Dysfunction and Caregiver Burden in Parkinson's Disease: The Role of Cognitive Flexibility and Psychological Distress

Barbara Blasutto¹, **Rossella La Cava**², **Ilaria Corbo**², **Giuseppe Forte**², **Francesco Fattapposta**³, **Maria Casagrande**²

¹ Dipartimento di Psicologia, Sapienza Università di Roma

² Department of Dynamic and Clinical Psychology and Health, University of Rome "Sapienza", 00185 Rome, Italy

³ Department of Human Neuroscience, Sapienza University of Rome, Viale dell'Università 30, 00185 Rome, Italy

Poster · PANEL (no track)

Parkinson's disease (PD) is a neurodegenerative disorder characterized by both motor and non-motor symptoms, including early executive dysfunction. Among these, cognitive flexibility appears to be particularly vulnerable. Moreover, PD is linked to increased caregiver burden. The present study investigated executive functioning in PD patients compared to healthy controls (HC) and explored the impact of patients' clinical, cognitive, and psychological variables on caregiver burden. 24 PD patients and 31 HC were included, comparable in age and education. Cognitive flexibility was assessed using the Trail Making Test (TMT B-A) and verbal fluency. Clinical and psychological measures included the Hoehn and Yahr scale, UPDRS-III, MMSE, and SCL-90. Additionally, 53 caregivers of the participants completed the SCL-90 and the Zarit Burden Interview (ZBI). PD patients showed significantly poorer cognitive flexibility than HC in verbal fluency ($F=5.95$, $p=.018$) and set-shifting ($F=4.54$, $p=.04$). They also had higher psychological distress (SCL-90 Global Severity Index; $F=14.68$, $p<.001$). Caregivers of PD patients reported significantly higher burden than HC caregivers ($F=9.65$, $p=.003$). A positive correlation emerged in caregivers of PD patients between ZBI total score and patients' psychological distress ($r=.56$, $p=.008$), whereas no significant correlations were found among caregivers of HC. These findings confirm that PD is associated with executive dysfunction, particularly in cognitive flexibility, and increased psychological distress. Importantly, caregiver burden appears to be more closely related to patients' psychological symptoms than cognitive or motor impairment, highlighting the need for comprehensive care approaches targeting both patients and caregivers.

40. The Impact of Mild Behavioral Impairment on Cognitive Functioning in Mild Cognitive Impairment and Healthy Older Adults

Barbara Blasutto¹, **Antonio Currà**², **Francesco Fattapposta**³, **Maria Casagrande**⁴

¹ Department of Psychology, University of Rome "Sapienza", 00185 Rome, Italy

² Department Neurology and Neurosurgery, AOU Policlinico Umberto I, Sapienza University of Rome, Rome, Italy

³ Department of Human Neuroscience, Sapienza University of Rome, Viale dell'Università 30, 00185 Rome, Italy

⁴ Department of Dynamic and Clinical Psychology and Health, University of Rome "Sapienza", 00185 Rome, Italy

Mini-talk · PANEL (no track)

Mild Behavioral Impairment (MBI) is a late-life neurobehavioral syndrome characterized by emergent changes in behavior and personality in individuals aged ≥ 50 years. It has been associated with an increased risk of Mild Cognitive Impairment (MCI) and a higher likelihood of progression to dementia. This study aimed to investigate the impact of MBI on cognitive functioning across different cognitive domains in cognitively healthy (HC) older adults and individuals with MCI. Older adults (>50 years) from the general population were recruited and

classified into four groups: HC with (HC-MBI) and without MBI (HC-nMBI), and individuals with MCI with (MCI-MBI) and without MBI (MCI-nMBI). MBI was evaluated through the Mild Behavioral Impairment-Checklist (MBI-C). Cognitive status was assessed using a comprehensive neuropsychological battery. The final sample included 175 participants. Multivariate analyses showed a significant main effect of diagnosis on memory ($F = 7.92$, $p < .001$) and executive functioning ($F = 9.07$, $p < .001$), but not on language or attention. MBI showed a significant main effect on memory ($F = 3.987$, $p = .002$), executive functioning ($F = 2.81$, $p = .041$), and attention ($F = 3.99$, $p = .020$), while no effect emerged for language ($p = .93$). No significant interaction between diagnosis and MBI was found across any cognitive domain. These findings suggest that MBI is associated with poorer performance in specific cognitive domains, indicating that behavioral changes may represent an early marker of cognitive vulnerability and a potential target for early identification and intervention.

41. ADHD Symptoms and Quality of Life in University Students: The Role of Emotional Dysregulation and Substance Use

Francesco Maria Boccaccio¹, Claudia Savia Guerrero¹, Vittoria Torre¹, Simone Varrasi¹, Giuseppe Alessio Platania¹, Sabrina Castellano¹, Maria Catena Ausilia Quattropiani¹, Concetta Pirrone¹, Santo Di Nuovo¹

¹ Department of Educational Sciences, University of Catania

Mini-talk · Attention, perception and consciousness

Attention Deficit/Hyperactivity Disorder (ADHD) is associated with poorer quality of life (QoL), particularly among university students. Emotional dysregulation (ED) and substance use (SU), closely linked to ADHD symptoms, may further contribute to this reduced well-being. This study aims to examine whether, and in what extent, ED and SU contribute to the association between ADHD symptoms and QoL in university students. Within the framework of the PROBEN-Unisth-Health project, 1000 students (57% female) from the University of Catania completed an online survey assessing ADHD symptoms (BAARS-IV), quality of life (WHOQoL-BREF), emotional dysregulation (RIPoSt-40), and substance use (ASSIST-Lite). Data were analysed using R software and Pearson correlations, multiple regression, and mediation analyses were computed. BAARS-IV scores are correlated with WHOQoL-BREF scores, RIPoSt-40 and ASSIST scores. Hierarchical regression analyses detailed the associations between ADHD symptoms, lower quality of life and tendency to use substances. Emotional dysregulation increased explained variance and attenuated the ADHD effect, while substance use showed a smaller contribution. Mediation analysis show that emotional dysregulation partially mediated the association between ADHD symptoms and quality of life, even after controlling for substance use. Differences between genders have been also examined. Findings highlight emotional dysregulation as a key mechanism underlying reduced quality of life in students with ADHD symptoms, suggesting the need for targeted clinical and preventive interventions.

42. RECODE: A Digital Open-Access Platform for Cognitive Stimulation. A Pilot Study in Non-Pathological Aging

Mario Bonato¹, Vincenzo Livoti², Adele Ravelli³, Irene Tarozzi³, Ester Lupinaro³, Zaira Romeo⁴, Giulio Contemori³, Maria Devita³

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

² Padova Neuroscience Center e Dipartimento di Psicologia Generale Università di Padova

³ Università di Padova, Dipartimento di Psicologia Generale

⁴ CNR, Padova

Poster · Life cycle (e.g., development and aging)

Cognitive decline in aging is a growing public health concern, and scalable remotely delivered interventions represent a promising preventive avenue. In this study we used RECODE, a self-administered digital cognitive training platform developed to slow pathological cognitive decline. Capitalizing on its adaptive difficulty levels, this study examined the feasibility and cognitive efficacy of its use in a group of cognitively healthy older adults. Forty community-dwelling adults aged 65-82 y.o. were enrolled in a crossover design and randomized to two groups of 20 participants each. Each group completed 15 training sessions over 5 weeks (3 sessions/week), delivered remotely and autonomously via RECODE, while the other group served as waitlist control. Cognitive outcomes were assessed at three time points using the Auto-GEMS digital screening tool, and the MoCA. Feasibility was indexed by dropout and protocol adherence. Mixed-effects models accounting for repeated measures and carryover effects were used for primary analyses. Of 40 enrolled participants, 37 completed the study, indicating strong feasibility of the remote self-administered format. Regarding the primary cognitive outcome, a significant Group x Time interaction emerged on Auto-GEMS delta scores ($t(74) = 2.273$, $p = .026$), with the group that had received training showing higher improvement compared to controls during the active treatment phase. These findings support the feasibility of remotely delivered RECODE training and suggest potential cognitive benefits in healthy older adults, while highlighting the need for larger, longer-term studies to confirm its preventive impact. All materials are in Italian. They are openly available for clinicians to use.

43. Un modello di equazioni strutturali della vulnerabilità all'uso problematico dello smartphone: la cascata Nevroticismo–disregolazione emotiva–FoMO nel framework I-PACE

Salvatore Bonfiglio¹, Diego Bellini², Roberta Renati³, Maria Pietronilla Penna⁴, Maria Lidia Mascia⁵

¹ Università degli Studi eCampus

² Università Mercatorum

³ Università degli Studi Unilink

⁴ Università degli Studi di Cagliari

⁵ Università degli Studi di Sassari

Mini-talk · Methodology

Il framework I-PACE (Brand et al., 2019) suggerisce che le predisposizioni individuali contribuiscano allo sviluppo di comportamenti di dipendenza tecnologica attraverso processi affettivi e cognitivi. Tra questi, il Nevroticismo è stato identificato come un importante predittore dell'uso problematico dello smartphone (PSU), sebbene i meccanismi sottostanti restino ancora poco chiari. Il presente studio testa un modello a cascata in cui la disregolazione emotiva media la relazione tra Nevroticismo e Fear of Missing Out (FoMO), che a sua volta

contribuisce al PSU. Un campione di 332 adulti italiani (244 femmine; età media = 34.6 anni, DS = 9.7) ha compilato una batteria di questionari self-report: EPQR-S (Nevroticismo), DERS-18 (disregolazione emotiva), FoMoS e MPPUS-24 (PSU). È stato stimato un modello di equazioni strutturali (SEM) con DERS e MPPUS come costrutti latenti. L'età è stata inclusa come covariata (effetto lineare su MPPUS, quadratico su DERS e FoMo) e l'invarianza di genere è stata verificata tramite analisi multigruppo. Gli effetti indiretti sono stati stimati con bootstrap (3000 campionamenti). I risultati mostrano un buon fit (CFI = .961; RMSEA = .075; SRMR = .037) e supportano la cascata Nevroticismo → Disregolazione Emotiva → FoMo → PSU ($\beta = .17$, $p < .001$). E' stata confermata inoltre l'invarianza rispetto al genere, e il ruolo dell'età nel legame tra disregolazione emotiva e FoMo ($p = .026$), che è risultata più marcata nei giovani. Nel complesso, la disregolazione emotiva emerge come meccanismo chiave che collega Nevroticismo, FoMo e uso problematico dello smartphone.

44. The implicit processing of biological movement: an EEG study on people with multiple sclerosis and healthy controls

Sofia Bonventre¹, Martina De Cesaris¹, Francesca Graziano², Pierpaolo Croce¹, Filippo Zappasodi¹, Valentina Tomassini³, Marcella Brunetti¹

¹ Institute for Advanced Biomedical Technologies (ITAB), Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy

² Institute for Advanced Biomedical Technologies (ITAB), Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy; Centre for Disability, Rehabilitation and Sports Medicine (CARES), Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy

³ Institute for Advanced Biomedical Technologies (ITAB), Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy; Centre for Disability, Rehabilitation and Sports Medicine (CARES), Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy. MS Centre, SS. Annunziata University Hospital, Chieti, Italy

Mini-talk · Attention, perception and consciousness

Perceiving Biological Movement (BM) automatically orients our attention towards the direction of actions performed by stylised human figures composed of lighted dots located at the joints, known as Point Light Walkers (PLWs), presented in either the global or local configuration, i.e. the entire series of dots or just two dots representing the feet. In healthy controls (HC), BM global and local cues facilitate the attentional orienting in Posner-like tasks. However, people with multiple sclerosis (PwMS) do not benefit from the local cues, due to slowed information processing or an inability to extract social information. This study aimed to investigate the neural correlates of abnormal BM perception in PwMS, compared to HC. Preliminary EEG data of 10 HC and 11 PwMS were collected while they performed a modified Posner task that included global or local BM cues presented at the centre of the screen while walking towards the left or right side of the screen. The target could appear in the same (valid trials) or opposite (invalid trials) side. Neural trajectory analysis of EEG activity in the 300–800 ms time window, collapsing all conditions, revealed differences in the temporal evolution of neural responses between groups. In HC, neural activity followed a relatively consistent trajectory across all trials characterized by a centro-parietal positive deflection followed by a later negative component. In contrast, PwMS showed a more variable and less consistent pattern. These differences may reflect alterations in the temporal dynamics of neural processes

supporting attentional orienting and biological motion cue processing.

45. Beliefs about deception in adolescence: A preliminary study with implications for judicial contexts

Caterina Borgese¹, Maria Grazia Vaccaro¹

¹ Università Magna Graecia di Catanzaro

Mini-talk · Social cognition

Deception is a widespread phenomenon in social interactions and is particularly relevant in judicial contexts, where credibility assessment plays a central role. While deception has been widely studied in children and adults, adolescence remains relatively underexplored, despite the increasing involvement of adolescents in judicial settings. To address this gap, this study investigates adolescents' beliefs about deception and its detection, focusing on perceived frequency of lying, self-reported lie detection abilities, and cues believed to indicate deception. Data were collected through an online self-report questionnaire completed by 94 participants (72.6% females; mean age = 16.87 years, SD = 1.50), recruited through a secondary school in Italy. Nearly half of the participants (48.4%) believe that people lie frequently in everyday life, and 37.9% associate lying with a desire to present oneself more favorably. A majority (51.6%) believe that recognizable cues of deception exist. Accordingly, participants endorsed widespread stereotypical beliefs, including frequent pauses (44%), gaze avoidance (41%), and speech errors (40%) as indicators of lying, which are not supported by empirical evidence. At the same time, 54.7% consider themselves capable of detecting lies, and 44.2% perceive themselves as more capable than others. The findings reveal a mismatch between adolescents' perceived ability to detect lies and their use of empirically unsupported cues. Overall, the study shows that adolescents' beliefs influence how they interpret and evaluate lying. Studying these beliefs is crucial for improving the accuracy of credibility assessments in judicial contexts.

46. Mappare le dinamiche affettive: un'analisi scientometrica della struttura, dei trend e delle direzioni emergenti

Francesca Borghesi¹, Pietro Cipresso¹

¹ University of Turin

Intervento in simposio · Methodology

Negli ultimi due decenni, lo studio delle affect dynamics ha assunto un ruolo centrale nella comprensione dei processi emotivi come fenomeni temporali e intraindividuali. In questo contributo presentiamo un'analisi scientometrica su un corpus di oltre 15.000 articoli indicizzati su Web of Science, con l'obiettivo di mappare l'evoluzione concettuale e metodologica del campo. Attraverso l'analisi di co-citazione di documenti e autori emergono tre principali cluster: (1) dinamiche affettive e psicopatologia, con focus su instabilità emotiva e disturbi dell'umore; (2) studi sulla variabilità e l'inerzia affettiva in contesti non clinici, spesso basati su disegni ESM/EMA; (3) approcci computazionali e modelli dinamici, inclusi sistemi a stati latenti e modelli di rete. Le analisi mostrano una crescente integrazione tra questi domini a partire dal 2015. La mappatura temporale delle keyword evidenzia un passaggio da termini come "emotional variability" e "affect lability" (2005–2012) a concetti più articolati quali "emotional inertia", "within-person dynamics" e "intensive longitudinal data" (2013–2019), fino

all'emergere recente (2020–2025) di temi quali “digital phenotyping”, “multimodal assessment” e “machine learning for affect dynamics”. I risultati suggeriscono una progressiva transizione del campo da descrizioni statiche a modelli dinamici e predittivi, con una crescente attenzione all'integrazione di dati fisiologici e comportamentali. Vengono infine discussi gli hot topics emergenti, tra cui l'uso di dati ad alta frequenza, l'integrazione multimodale e l'applicazione di modelli stocastici per la previsione delle transizioni affettive.

47. Mapping Affect Dynamics: A Scientometric Analysis of Structure, Trends, and Emerging Directions

Francesca Borghesi¹, Pietro Cipresso²

¹ Università di Torino

² University of Turin

Intervento in simposio · Methodology

Negli ultimi due decenni, lo studio delle affect dynamics ha assunto un ruolo centrale nella comprensione dei processi emotivi come fenomeni temporali e intraindividuali. In questo contributo presentiamo un'analisi scientometrica su un corpus di oltre 15.000 articoli indicizzati in Web of Science, con l'obiettivo di mappare l'evoluzione concettuale e metodologica del campo. Attraverso analisi di co-citazione di documenti e autori, emergono tre principali cluster: (1) dinamiche affettive e psicopatologia, con focus su instabilità emotiva e disturbi dell'umore; (2) studi su variabilità e inerzia affettiva in contesti non clinici, spesso basati su disegni ESM/EMA; (3) approcci computazionali e modelli dinamici, inclusi sistemi a stati latenti e modelli di rete. Le analisi mostrano una crescente integrazione tra questi domini a partire dal 2015. La mappatura temporale delle keyword evidenzia un passaggio da termini come “emotional variability” e “affect lability” (2005–2012) verso concetti più articolati quali “emotional inertia”, “within-person dynamics” e “intensive longitudinal data” (2013–2019), fino all'emergere recente (2020–2025) di temi quali “digital phenotyping”, “multimodal assessment” e “machine learning for affect dynamics”. I risultati suggeriscono una progressiva transizione del campo da descrizioni statiche a modelli dinamici e predittivi, con una crescente attenzione all'integrazione di dati fisiologici e comportamentali. Vengono infine discussi gli hot topics emergenti, tra cui l'uso di dati ad alta frequenza, l'integrazione multimodale e l'applicazione di modelli stocastici per la previsione delle transizioni affettive.

48. Inner embodiment: The case of inner speech

Anna M. Borghi¹, Chiara De Livio¹

¹ Sapienza Università di Roma

Intervento in simposio · Language, reading and music

Inner speech—also known as inner dialogue, verbal thinking, and by various other terms—refers to the subjective experience of hearing oneself speak silently. Phenomenologically, it occurs in various ways. Some people hardly speak with themselves (anendophasia), while others speak to themselves in various ways, from dialoguing with oneself to speaking in condensed or expanded forms. Research has underlined that inner speech is a cognitive tool – it may enhance executive functions, improve attentional focus, promote working memory, and facilitate emotion regulation. The talk will explore a relatively unexplored area: the relationship between inner speech and semantic memory. Specifically, it will focus on recent studies testing the hypothesis that people use inner speech more with abstract concepts (e.g., justice vs. table) because they are more

complex and lack an object as a referent. In particular, I will illustrate two research lines. The first one includes studies that use interference paradigms, such as articulatory suppression, to examine whether processing of abstract concepts is more affected than that of concrete concepts. The second research line involves studies of inner speech in use, with the aim of detecting its signatures, such as characteristic bodily movements, during cognitive tasks. We used either classical categorization tasks, such as feature listing, or asked dyads of participants conversing about concrete and abstract concepts. Overall, the results indicate that inner speech may support semantic memory and play a particularly vital role for abstract and vague concepts, and highlight its context-sensitive role in semantic processing during social interaction.

49. Disentangling Domain and Modality in Cognition and Theory of Mind in Parkinson's Disease

Sara Bottiroli¹, Martina Cangelosi², Serena Lecce², Sara Bernini³, Micol Avenali¹, Cristina Tassorelli¹, Tomaso Vecchi¹, Elena Cavallini²

¹ Department of Brain and Behavioural Sciences, University of Pavia, Pavia, Italy; IRCCS Mondino Foundation, Pavia, Italy

² Department of Brain and Behavioural Sciences, University of Pavia, Pavia, Italy

³ IRCCS Mondino Foundation, Pavia, Italy

Mini-talk · Social cognition

Beyond motor symptoms, Parkinson's disease (PD) affects cognition and social cognition. These changes are detectable even in cognitively intact PD, but are more pronounced in mild cognitive impairment (PD-MCI). The role of processing modality (verbal vs. non-verbal) remains unclear. We examined differences in verbal and non-verbal components of cognition and Theory of Mind (ToM) in PD and PD-MCI compared to healthy controls (HC). Seventy-seven participants (HC = 26; PD = 28; PD-MCI = 23) completed a neuropsychological battery assessing verbal and non-verbal cognition, as well as verbal and non-verbal ToM. Data were analyzed using non-parametric statistics and multinomial logistic regression. Both PD groups showed significant impairments relative to HC, with greater deficits in PD-MCI. Verbal cognition was reduced in both PD groups ($\chi^2 = 27.46$, $p < .001$), whereas non-verbal cognition was impaired only in PD-MCI ($\chi^2 = 16.17$, $p < .001$). Verbal ToM was selectively impaired in PD-MCI ($\chi^2 = 9.07$, $p = .01$), while non-verbal ToM was largely preserved ($p > .33$). Regression analyses indicated that lower verbal and non-verbal cognitive scores were associated with increased likelihood of PD-MCI classification. Overall, findings support a framework in which domain-specific vulnerabilities are primary, while modality modulates performance through its interaction with task complexity and executive demands. This 2x2 framework (domain × modality) refines our understanding of cognitive decline in PD and highlights the importance of domain- and modality-sensitive assessments.

50. Musica e bellezza nel cervello – Dalle caratteristiche acustiche al ruolo della cultura

Elvira Brattico¹

¹ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

Intervento in simposio · Emotions and motivation

Per secoli, la ricerca della bellezza nella musica è stata un obiettivo centrale per compositori e musicisti, anche se alcune avanguardie si sono discostate da questo scopo. Oggi, la

bellezza resta un concetto fondamentale nella musica, sia per il pubblico che per i musicisti. Tuttavia, le neuroscienze cognitive hanno esplorato raramente le basi neurali della bellezza musicale, soprattutto da una prospettiva cross-culturale. In questo contesto, sono stati presentati studi che mirano a colmare questa lacuna. Un primo studio ha utilizzato sensori di movimento, analisi acustiche e giudizi di esperti per individuare passaggi musicali belli e non belli in brani di musica occidentale. Le risposte cerebrali a questi passaggi sono state misurate con risonanza magnetica funzionale, mostrando l'attivazione della corteccia orbitofrontale facente parte del circuito della ricompensa, durante l'ascolto di passaggi belli, e delle aree temporali uditive per i passaggi meno belli. Un altro studio ha esaminato la musica tradizionale cinese, valutata da partecipanti cinesi e occidentali, ed utilizzata durante registrazioni elettroencefalografiche. L'analisi ha rivelato una differenza nella relazione tra bellezza e caratteristiche sonore tra le due tradizioni musicali: mentre nella musica occidentale la bellezza era associata a emozioni come tristezza e calma, nella musica cinese veniva collegata ad emozioni di natura più cognitiva. I risultati, uniti all'analisi RSA dei dati cerebrali, hanno mostrato come il background culturale influenzi significativamente la percezione e l'elaborazione della bellezza musicale nel cervello.

51. Confronto tra NHST e metodo Bayesiano nell'utilizzo di Modelli Generalizzati Misti: un esempio di studio "underpowered"

Giovanni Bruno¹, Stefano Dalla Bona², Simone Cutini³, Marta Caserotti³, Lorella Lotto³, Michela Sarlo⁴, Nicola Cellini², Andrea Spoto²

¹ Università degli Studi di Padova, DPG

² Università degli Studi di Padova, Dipartimento di Psicologia Generale (DPG)

³ Università degli Studi di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione (DPSS)

⁴ Università di Urbino Carlo Bo, Dipartimento di Scienze della Comunicazione, Studi Umanistici e Internazionali (DISCUI)

Mini-talk · Methodology

La ricerca psicologica si avvale tipicamente del paradigma frequentista "Null Hypothesis Significance Testing" (NHST) per testare le ipotesi sperimentali. Tuttavia, in presenza di risultati non significativi e/o in un disegno sperimentale sotto-potenziato, i ricercatori possono essere tentati di ricorrere all'approccio bayesiano come alternativa vantaggiosa o come complemento di analisi. Questo lavoro esamina empiricamente come i due framework siano capaci di affrontare lo stesso test di ipotesi, evidenziandone le differenze (i) concettuali, (ii) operative e (iii) interpretative. I dati analizzati provengono da uno studio pre-registrato su OSF che indaga l'influenza del (i) tempo decisionale disponibile e (ii) della progressione dei trial sulla risposta utilitaristica in dilemmi morali. I partecipanti (N = 185) sono stati assegnati a tre condizioni sperimentali (Pressione, Delay, Controllo) e hanno risposto a tre dilemmi presentati sequenzialmente. Un modello logistico misto è stato utilizzato come modello di analisi per confrontare i due approcci. I risultati mostrano come nessun predittore abbia raggiunto la significatività statistica nell'analisi NHST. L'analisi bayesiana ha prodotto stime sostanzialmente concordanti, con distribuzioni a posteriori dei parametri centrate attorno allo zero e intervalli di credibilità ampi. L'uso del Bayes Factor ha inoltre fornito evidenza aggiuntiva a favore dell'assenza di effetto, riuscendo a distinguere tra mancanza di evidenza ed evidenza di assenza. I due approcci convergono nelle loro conclusioni pratiche, pur differendo nell'interpretazione dell'incertezza e

nella ricchezza informativa, mettendo in luce come rispondano a domande fondamentalmente diverse -- e fungendo così da monito contro un utilizzo intercambiabile e acritico tra i due framework.

52. Oculomotor control in developmental dyslexia: a main sequence analysis across eye movement tasks

Antimo Buonocore¹, Adriana Pagano¹, Giovanni Mario Capolongo¹, Carmela Pacelli¹, Ciro Pizzo¹

¹ Università degli Studi Suor Orsola Benincasa

Poster · Language, reading and music

The magnocellular theory of developmental dyslexia posits that a weakened magnocellular signal may lead to perceptual deficits that ultimately impair reading. Consistent with this view, a growing body of research reports atypical eye movement patterns in individuals with dyslexia compared with neurotypical controls, suggesting a vulnerability at early stages of visuomotor processing. We examined the main sequence—the relationship between saccadic amplitude and peak velocity—to characterize oculomotor execution and assess whether alterations predicted by the magnocellular theory extend to basic saccadic dynamics. We recruited young adults with (N = 11, mean age = 20.2) and without (N = 28, mean age = 20.7) a diagnosis of dyslexia, who completed three eye-tracking paradigms: a visually guided saccade task, a visual search task, and a reading task. A neuropsychological battery was also administered to assess domain-specific functioning across groups. Results showed that the main sequence was only minimally modulated across tasks, indicating preserved downstream oculomotor transformations. However, participants with dyslexia exhibited a distinct oculomotor profile compared to controls. Specifically, they showed reduced peak velocity during both visually guided saccades and visual search exploration, consistent with lower oculomotor gain. During reading, this pattern was accompanied by a shift toward shorter saccades. Taken together, these findings suggest that eye movement alterations in dyslexia do not reflect a core deficit in oculomotor control. Rather, they point to differences in visual sampling strategies, characterized by reduced saccadic vigor and altered exploration dynamics.

53. Intervento perinatale con ossitocina e traiettorie del neurosviluppo: effetti duraturi su comportamento e cervello sociale

Marta Busnelli¹, Francesco Papaleo², Françoise Muscatelli³, Bice Chini⁴

¹ CNR Institute of Neuroscience

² Italian Institute of Technology, Neuroscience Area, Genoa (Italy)

³ Institut de Neurobiologie de la Méditerranée (INMED), INSERM, Aix Marseille Université, Marseille (France).

⁴ CNR, Institute of Neuroscience, Veduggio al Lambro (Italy)

Intervento in simposio · Social cognition

Il neuroormone ossitocina rappresenta un modulatore fondamentale dello sviluppo del cervello sociale e svolge un ruolo cruciale non solo nella cognizione sociale, ma anche nella motivazione a intraprendere interazioni sociali. Alterazioni precoci del sistema ossitocinergico sono state implicate fin dalle prime fasi di vita in diversi disturbi del neurosviluppo, come i disturbi dello spettro autistico (DSA) caratterizzati da deficit persistenti nella comunicazione e nell'interazione sociale. Sebbene l'ossitocina abbia quindi attirato un crescente interesse come potenziale candidato terapeutico, gli effetti di

interventi somministrati in specifiche finestre temporali dello sviluppo rimangono ancora poco compresi. Abbiamo valutato gli effetti di un trattamento perinatale con ossitocina in due modelli murini di DSA associati a disfunzioni precoci del sistema ossitocinergico. In entrambi i modelli, il trattamento con ossitocina ha determinato miglioramenti comportamentali robusti e persistenti, in particolare nei domini dell'interazione sociale e delle risposte adattive. È di particolare rilievo il fatto che la somministrazione di ossitocina durante finestre sensibili del periodo postnatale sia risultata sufficiente a prevenire l'insorgenza di anomalie comportamentali tipicamente osservate nelle fasi successive dello sviluppo. Oltre agli esiti comportamentali, il trattamento perinatale con ossitocina ha favorito anche un decorso di sviluppo cerebrale più tipico, suggerendo una riorganizzazione ampia e duratura dei processi di sviluppo piuttosto che un effetto sintomatico transitorio. Nel complesso, questi risultati supportano l'ipotesi che un intervento terapeutico precoce con ossitocina possa modulare in modo stabile le traiettorie del neurosviluppo e ne evidenziano il potenziale come trattamento farmacologico per le patologie come i DSA caratterizzate da deficit nelle funzioni sociali.

C

54. Correcting the Probability of Direction for Multiple Testing

Margherita Calderan¹, Filippo Gambarota², Enrico Toffalini³, Gianmarco Altoè²

¹ University of Padova, Department of Developmental Psychology and Socialization, Department of General Psychology

² University of Padova, Department of Developmental Psychology and Socialization

³ University of Padova, Department of General Psychology

Intervento in simposio · Methodology

The probability of direction (pd) has become a widely adopted Bayesian index in psychological research, offering an intuitive measure of whether an effect is credibly positive or negative. In practice, researchers routinely apply conventional thresholds (e.g., $pd > 0.975$) to render binary decisions about an effect's presence. Yet when this rule is applied repeatedly across many parameters, the probability of obtaining at least one misleading conclusion grows steadily, creating a multiplicity problem that remains largely overlooked in the psychological literature. This talk examines the operating properties of pd-based decisions under repeated use, demonstrating through simulation that extreme pd values can arise by chance alone, producing inflated rates of misleading evidence. To address this, we reformulate pd via posterior odds and propose a prior-odds adjustment that accounts for multiplicity by reducing the prior probability assigned to each individual hypothesis. Crucially, this strategy separates within-model priors from beliefs about the broader hypothesis space, allowing researchers to retain full flexibility in prior specification while controlling error rates across parameters. We further extend the method to accommodate correlations among tested hypotheses and benchmark its performance against standard frequentist multiplicity corrections. An accompanying R package implements the proposed procedure, making multiplicity-adjusted pd-based inference readily accessible for routine use. As Bayesian thresholding becomes increasingly normative in applied settings, tools that make its error consequences explicit are essential. Our procedure offers a coherent, principled framework to recalibrate pd-based

decisions for multiple tests, ensuring reported discoveries reflect genuine effects rather than chance patterns.

55. Toward Robust Replicability: Contemporary Perspectives and Methods

Margherita Calderan¹

¹ Università di Padova

Simposio · Methodology

Replicability is fundamental to science, yet under scrutiny in psychology. Rather than a limitation, this challenge has fostered new methodological developments aimed at improving how evidence is generated, evaluated, and accumulated in psychological research. This symposium brings together four contributions that rethink replicability from complementary perspectives, offering both conceptual clarity and practical tools for empirical research. First, Alongi et al. introduce an innovative multifaceted Bayesian framework that integrates different notions of replicability within a unified inferential structure, enabling coherent assessment across studies and research settings. Second, Garofalo et al. present informative hypothesis testing as a flexible alternative to traditional null hypothesis significance testing, allowing researchers to directly evaluate theoretically meaningful expectations. Third, Calderan et al. tackle multiplicity in Bayesian inference by adjusting the probability of direction to reduce misleading conclusions when many hypotheses are tested. Finally, Andreella et al. extend multiverse inference to generalized linear mixed models, providing robust tools for handling dependent data and complex designs. The symposium will also include time for discussion, encouraging exchange on how these advances can inform everyday research practices in psychology. Together, these contributions highlight emerging directions to strengthen replicability, offering tools that are both methodologically rigorous and practically relevant.

56. How Much Does Scoring Change the Story? Psychometric Stability in the Heart and Flower Task Through a Multiverse Lens

Giulia Calignano¹, Margherita Calderan², Filippo Gambarota¹, Marta Pretto¹, Tatiana Marci¹

¹ University of Padova, Department of Social and Developmental Psychology

² University of Padova, Department of General Psychology

Mini-talk · Methodology

The Heart and Flower task is a widely used tool for assessing children's executive functioning. Depending on the study, performance may be indexed by accuracy, reaction times, difference scores, composite measures, or joint accuracy-RT formulations reflecting the lack of a common scoring method. This plurality may foster questionable measurement practices, which in turn can yield different conclusions hindering comparability of results across studies. We address this issue with a psychometrically oriented multiverse analysis. Starting from trial-level task data, we examined associations with age as an indicator of construct validity while systematically varying key analytic decisions. The multiverse included alternative subject inclusion rules, different RT summaries, congruent-referenced difference scores, inverse efficiency metrics, standardized accuracy-RT composites, and interaction-based scoring approaches. This generated a structured space of plausible scoring specifications rather than a single privileged index. For each specification, age effects were estimated with subject-level linear models and

generalized additive models, and with trial-level mixed-effects models including subject random intercepts and condition slopes, alongside GAMs with smooth age functions and subject random effects. To summarize robustness across the analytic space, we used specification curves, volcano plots, and model-based predictive visualizations. Rather than asking whether the task “works” under one scoring rule, this study asks which conclusions survive across many defensible choices. The goal is to identify indices that show stable age-related gradients, distinguish them from specification-sensitive effects, and provide a transparent framework for evaluating the psychometric robustness of children’s executive function measures when multiple scoring approaches are simultaneously plausible.

57. Falsi ricordi e allucinazioni: convergenze e differenze nei processi di monitoraggio della fonte e della realtà

Giorgio Campo¹, Giorgia Farruggio¹, Siria Cibella¹, Elisa Viscuso¹, Giulia Tomasello¹, Ugo Pace¹, Alessia Passanisi¹

¹ Università di Enna “KORE”

Poster · Memory

La letteratura sui falsi ricordi e quella sulle allucinazioni si sono sviluppate per lungo tempo in modo separato, pur richiamando entrambe processi cognitivi legati alla distinzione tra eventi interni ed esterni e all’attribuzione della loro origine. Il presente contributo propone una scoping review preliminare volta a esaminare convergenze e differenze tra questi due ambiti, con particolare attenzione ai processi di monitoraggio della fonte, monitoraggio della realtà e automonitoraggio. È stata condotta una rassegna preliminare strutturata, finalizzata a individuare i principali modelli teorici, i paradigmi sperimentali più ricorrenti e le criticità metodologiche emergenti nella ricerca psicologica, neurocognitiva e clinica. Nella fase attuale sono stati sottoposti a screening di titolo e abstract 206 contributi, dei quali 133 sono stati considerati potenzialmente pertinenti per la successiva valutazione del testo completo. I risultati preliminari evidenziano una convergenza teorica sul ruolo dei processi di attribuzione erronea di contenuti generati internamente, ma anche una significativa eterogeneità nei metodi di indagine, che includono compiti di memoria della fonte, monitoraggio della realtà, automonitoraggio verbale, rilevazione del segnale e misure del senso di agency. Nel complesso, i dati suggeriscono che il monitoraggio della fonte e della realtà rappresentino un ponte teorico promettente per comprendere il rapporto tra falsi ricordi e allucinazioni, indicando la necessità di studi comparativi più sistematici e di una maggiore integrazione tra psicologia sperimentale e psicopatologia.

58. Neuroaesthetics in rehabilitation: Mechanisms, applications, and clinical perspectives

Alice Cancer¹

¹ Dipartimento di Psicologia, Università Cattolica del Sacro Cuore di Milano

Simposio · Language, reading and music

Neuroaesthetics is a relatively recent field that investigates the neural substrates underlying human aesthetic experiences. In recent years, growing interest has extended toward its potential applications in neurorehabilitation, where the integration of aesthetic stimuli may represent an innovative strategy to enhance functional recovery. Aesthetic experiences – such as those elicited by music and visual arts – can modulate cognitive and emotional processes through mechanisms of brain plasticity, while also fostering patient engagement and

motivation. In light of the limited availability of structured and replicable clinical protocols incorporating aesthetic stimuli, this symposium aims to explore neuroaesthetics as a translational framework for neurorehabilitation. Greta Varesio (Università di Torino) will present neuroscientific evidence supporting the relationship between aesthetic preferences and cognitive enhancement. Marta Mondellini (CNR-STIIMA, Lecco) will offer a neuroaesthetic perspective on the use of visual and musical stimuli to enhance motivation in rehabilitation, deriving practical insights for clinicians from experiments in controlled settings. Francesca Colombi (Università degli Studi di Bergamo) will report findings from a clinical study investigating neuroaesthetics as a novel approach to boost cognitive rehabilitation in Mild Cognitive Impairment. Finally, Elia Amighetti (Università Cattolica del Sacro Cuore, Milan) will discuss the effects of a music- and rhythm-based telerehabilitation intervention in post-stroke aphasia. By integrating both research and clinical perspectives, the symposium aims to provide a multifaceted understanding of how aesthetic experiences can inform and transform neurorehabilitation practices.

59. Mapping soft skills: A network analysis of positive humor and perceived competencies

Carla Canestrari¹, Alessandra Fermani¹, Lorella Giannandrea¹, Manuel Teresi¹

¹ Università di Macerata, Dipartimento di Scienze dell’educazione, dei beni culturali e del turismo

Poster · Social cognition

Soft skills are crucial in university education aimed at preparing students for the workforce, yet how these competencies relate as a system remains poorly understood. Positive humor (benevolent and affiliative) is rarely considered in this context, despite its potential relevance for professional functioning. This study, part of the DEVICES project (<https://www.devices-erasmus.eu/>), aims to explore how the positive humor fits within the broader system of soft skills. A sample of 277 Italian university students (M_{age} = 22.2 years, SD = 5.6) completed a questionnaire including the following validated measures: Comic Style Markers, General Self-Efficacy Scale, State Self-Esteem Scale, Digital Self-Efficacy, Leadership, and Teamwork. Data were analyzed using descriptive statistics, correlational analyses, and network analysis, which models variables as nodes and their relationships as edges. Centrality and bridge indices were examined to identify structurally relevant variables. Positive humor was positively associated with self-efficacy, leadership, and self-esteem. Network analysis revealed a two-cluster structure: an intrapersonal cluster (positive humor, self-efficacy, self-esteem) and a professional cluster (leadership, teamwork, digital self-efficacy). Self-efficacy and leadership emerged as central nodes and showed balanced connections across clusters, indicating their role as bridges linking internal psychological resources with externally oriented competencies. Findings support an integrated view of soft skills as an interconnected system of intrapersonal and professional dimensions. Positive humor appears to be a relevant relational resource within this system. Despite its limitations, the study offers a network-based perspective that may inform future research on students’ psychological and professional development.

60. From bodily to navigational space: Development across early childhood

Silvia Canino¹, Arianna Lamberti¹, Erica Dolce², Liana Palermo¹

¹ Department of Medical and Surgical Sciences, "Magna Graecia" University of Catanzaro, Catanzaro, Italy

² Department of Clinical and Experimental Medicine, University of Messina, Messina, Italy

Poster · Attention, perception and consciousness

From early childhood, individuals interact with different types of space, including navigational and bodily space. Prior research has largely examined these spaces in isolation, with limited evidence on age-related differences in early childhood. Building on the theoretical framework proposed by Tversky et al. (1999), this study explored inner body space, outer body space (both configurational and action-oriented), and navigational space in the same sample of children aged 4 and 6 years. Additionally, it examined whether interindividual variability in the processing of bodily space is associated with navigational performance in this age range. Twenty-eight typically developing children, divided into two age groups (4-year-olds and 6-year-olds), completed tasks assessing inner body space (Jumping Jack Paradigm, JJP), configurational outer body space (Frontal Body Evocation Task, FBET), action-oriented outer body space (Hand Laterality Task, HLT), and navigational space (Walking Corsi Test, WalCT). Results (Mann–Whitney U tests) showed that 6-year-olds outperformed 4-year-olds in navigational space processing (WalCT) and in the configurational representation of the body (FBET). However, no significant age-related differences were found in inner body space processing (JJP) or action-oriented body representation (HLT). Correlation analyses further revealed significant associations between both measures of outer body space and navigational performance. Overall, these preliminary findings suggest that different kinds of spatial representations may follow different developmental trajectories. In line with specific embodied cognition theories (Goldman & de Vignemont, 2009), they also highlight that, already at this age, individual differences in bodily representations could be linked to differences in navigational performance.

61. Interoception across adolescence and adulthood: differences in the development of perceptual and metacognitive dimensions

Silvia Canino¹, Erica Dolce², Valentina Torchia³, Irene Ruffo³, Teresa Iona¹, Simona Raimo¹, Liana Palermo¹

¹ Department of Medical and Surgical Sciences, Magna Graecia University, Catanzaro

² Department of Clinical and Experimental Medicine, University of Messina, Messina, Italy

³ Department of Health Sciences, Magna Graecia University, Catanzaro

Intervento in simposio · Attention, perception and consciousness

Interoception, the perception of inner bodily signals, is pivotal to emotional regulation, cognition, and mental health. Although its relevance has been widely investigated in adulthood, less is known about its development during adolescence, a period marked by profound physical and psychological changes. Following recent taxonomies, the study aims to compare different interoceptive dimensions across adolescents and adults, with a particular focus on metacognitive aspects. A total of 104 participants (54 adolescents aged 12–14 and 50 adults aged 25–34) completed the heartbeat counting task (HCT), from which we derived measures of cardiac interoceptive accuracy, confidence in performance, and the correspondence

between confidence and accuracy as an index of metacognitive insight. Participants also reported the perceived localization of their sensations during the HCT and completed a questionnaire measuring the tendency to focus on bodily sensations. Results revealed no significant group differences in interoceptive accuracy or in the localization of bodily sensations during the HCT, which were predominantly reported in the chest area. However, adolescents showed lower interoceptive metacognition, reporting lower accuracy-confidence correlations, alongside a greater self-reported focus on somatosensory and visceral bodily sensations. These findings indicate that, while the ability to detect inner bodily signals is already established in early adolescence, the metacognitive monitoring of these signals shows a more protracted developmental trajectory extending into adulthood. The mismatch between heightened bodily focus and limited metacognitive insight in adolescents may contribute to the increased vulnerability to mental health difficulties in this period of life.

62. How Daily Simple and Complex Mood States Relate to Sexual Motivation and Strategies for Orgasm

Rosaria Capasso¹, Jeff Kiesner¹, Celeste Bittoni¹

¹ Università di Padova

Mini-talk · Health, sport and wellbeing

An important question in sex research regards the relationship between sexual motivation, orgasmic strategies, and mood states. A prospective longitudinal study collected daily reports across two menstrual cycles (n=368 women; 15,459 daily observations) to explore mood states, sexual motivations and strategies across 2,115 sexual events and 1,315 orgasms. Positive and negative mood ratings were used to classify daily mood into four states: positive (high positive, low negative), negative (high negative, low positive), ambivalent (high positive, high negative), and indifferent (low positive, low negative). Mixed-effects models with random intercepts and person-centered predictors were applied to assess within-person daily variation in mood, sexual motivation, and orgasmic strategies, followed by post-hoc analyses to contrast the four mood states. Daily mood significantly predicted both sexual motivation and orgasmic strategies. When experiencing negative mood, women reported less self-focused motivation relative to positive and ambivalent mood, and lower other-focused orgasmic strategies relative to all other mood states. This pattern reveals a distinction between self- and other-focused motivation and strategies: negative mood was associated with lower self-focused motivation and, concurrently, with lower other-focused strategies. Interestingly, ambivalent and indifferent mood states showed a pattern comparable to positive mood. Negative mood was associated with both lower self-focused motivation and lower other-focused strategies. The comparable profiles of ambivalent, indifferent, and positive mood suggest that positive affect may account for the ambivalence effect, while the absence of negative affect may explain the indifference effect. Clinically, supporting individuals in adopting effective motivational and strategic approaches, independent of mood, may promote greater sexual satisfaction.

63. The impact of neurodegeneration on moral decision-making: a systematic review

Giorgia Capitani¹, Daniele Lozzi², Giuseppe Curcio³, Simone Migliore³

¹ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche Applicate e Biotecnologiche

² Università degli Studi dell'Aquila, Dipartimento di Medicina Clinica, Sanità Pubblica e Scienze della Vita e dell'Ambiente

³ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche Applicate e Biotecnologiche

Poster · Social cognition

Among the components of social cognition, moral decision-making plays a fundamental role, encompassing both affective and cognitive elements. In this context, neurodegenerative diseases provide a unique model for investigating the neural patterns underlying moral cognition. In this review, we aim to investigate the patterns of moral decision-making across different neurodegenerative diseases, identifying pathology-specific deficit profiles and highlighting current methodological limitations to guide future research. A systematic search of PubMed, Web of Science, and Scopus was conducted for studies published up to January 2025, following Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 guidelines. The 17 reviewed studies reveal disease-specific moral profiles: bvFTD drives utilitarian choices due to empathy loss, while Alzheimer's preserves harm aversion despite cognitive decline. Furthermore, ALS and Parkinson's leave moral reasoning largely intact, unlike the mixed socio-cognitive impairments seen in Lewy body dementia. Findings reveal that disease-specific moral dysfunctions stem from targeted neural network damage rather than global cognitive decline. Understanding these mechanisms is vital for early diagnosis, assessing ethical capacity, and developing better clinical tools.

64. Dynamic reorganization of visual field asymmetries across the visual hierarchy

Giovanni Mario Capolongo¹, Rita Vassallo¹, Alessio Fracasso², Antimo Buonocore¹

¹ Department of Educational, Psychological and Communication Sciences, Suor Orsola Benincasa University, Naples, Italy, 80135

² Department of Psychology, University of Padua, Padua, Italy, 35131

Poster · Attention, perception and consciousness

Perception is not uniform across the visual field, with systematic asymmetries across meridians and polar angles. While these effects are well established for simple stimuli and tasks, it remains unclear whether they extend to complex object perception under different task demands. Across three experiments, we tested whether these spatial asymmetries generalize to different levels of processing, from simple to complex. In Experiment 1 (N = 23), participants performed an object detection task with stimuli presented in the upper or lower visual fields under varying noise levels, thereby engaging low-level visual processing. Visual sensitivity increased as noise decreased and was consistently higher in the lower visual field, revealing the expected vertical field asymmetry. In Experiment 2 (N = 22), we targeted intermediate processing using an orientation discrimination task, manipulating the spatial frequency content of the stimuli along the vertical and horizontal meridians. Performance favoured the lower and left visual field, whereas no overall difference emerged between vertical and horizontal meridians, regardless of spatial frequency. In Experiment 3 (N = 30), we examined higher-level processing through object categorization. Here, the pattern

reversed, showing a performance advantage of the horizontal meridian over the vertical, with no differences between the upper and lower visual fields. Microsaccade analysis revealed that dynamics during fixation mirrored this effect, selectively indexing orienting responses along the horizontal axis. Across experiments, spatial asymmetries varied systematically with processing level. Together, these findings show that visual field asymmetries are not fixed properties of the visual system but flexibly reorganize with task demands.

65. Developing and Validating a Measurement Scale to Assess Belief in Neuromyths Among Italian Teachers

Francesco Carabba¹, Rossella Zenelli², Marina Ottavia Epifania³, Demis Basso¹

¹ Cognitive and Educational Sciences Lab (CESLab), Faculty of Education, Free University of Bolzano-Bozen, Bressanone-Brixen (BZ), Italy

² Department of Psychology and Cognitive Science, University of Trento, Rovereto (TN)

³ Department of Psychology and Cognitive Science, University of Trento, Rovereto (TN), Psicostat Research Group, University of Padova, Padova (PD), Italy

Poster · Methodology

Neuromyths are misconceptions or distortions of scientifically established findings about the brain, often invoked to justify educational practices. Because teachers regularly rely on ideas about learning and cognition in their professional work, understanding beliefs in neuromyths in this population is essential. However, no existing instrument has been adequately validated. The questionnaire developed by Dekker et al. (2012), widely used across countries, has important limitations: its dichotomous yes/no format may conceal degrees of endorsement, and it mainly assesses declarative knowledge rather than procedural knowledge, which is more directly related to behavior in practice. This project aims to develop and validate a new self-report instrument to assess adherence to neuromyths among Italian teachers. As a first step, a preliminary scale focused on knowledge of memory and learning processes is developed. An item pool of 34 multiple-choice items based on realistic classroom situations was developed. The quality of the items was initially examined in a small sample, with particular attention given to the comprehensibility of both the items and their response options. Then, a pilot study involving 38 pre-service teachers was conducted for further investigating the item functioning and clarity of wording, and for exploring whether responses varied according to prior coursework and self-reported knowledge. The scale measuring knowledge of memory and learning processes, developed on the basis of this pilot study, will provide a pool of well-calibrated items to support the development and validation of the neuromyth scales in the main study.

66. Visioni sull'invecchiamento, riserva cognitiva e qualità di vita in adulti e anziani

Elena Carbone¹, Enrico Sella¹, Erika Borella¹

¹ Dipartimento di Psicologia Generale, Università degli Studi di Padova Ospedale San Camillo IRCCS di Venezia

Mini-talk · Life cycle (e.g., development and aging)

Il presente studio ha avuto l'obiettivo di esaminare le relazioni tra le visioni personali sull'invecchiamento, indicatori di riserva cognitiva e la qualità di vita (QdV) in adulti e anziani, esplorando il ruolo della riserva cognitiva nello spiegare l'associazione tra visioni sull'invecchiamento e QdV. Un

campione di 552 partecipanti (50-84 anni) ha riportato l'età percepita e compilato l'Attitudes Toward Own Aging scale (ATOA) e il questionario di Consapevolezza dei Cambiamenti Correlati all'Invecchiamento in termini di guadagni (CCCI-Guadagni) e perdite (CCCI-Perdite), come misure di visioni personali sull'invecchiamento, il questionario WHOQOL-Bref come misura di QdV, e il questionario di Riserva Cognitiva Attuale e Passata, che coglie diversi indicatori di riserva cognitiva al momento attuale (RC-Attuale) e in riferimento alla giovinezza (RC-Passata). I risultati hanno evidenziato come atteggiamenti positivi verso il proprio invecchiamento (ATOA) si associno a miglior QdV attraverso maggior CCCI-Guadagni, mentre atteggiamenti negativi e una maggior età percepita si associno a peggior QdV attraverso maggior CCCI-Perdite. Le visioni personali sull'invecchiamento presentano un complesso pattern di associazioni con RC-Attuale e RC-Passata, e solo quest'ultima è risultata direttamente associata ad una miglior QdV. Infine, atteggiamenti positivi verso il proprio invecchiamento sono risultati associati a maggior RC-Attuale e RC-Passata e, indirettamente, a miglior QdV, mentre maggior CCCI-Guadagni è risultata associata ad una miglior QdV attraverso maggior RC-Attuale. I risultati confermano la rilevanza delle visioni sull'invecchiamento per la QdV, e suggeriscono come indicatori di riserva cognitiva possano rappresentare un meccanismo comportamentale che spiega tale relazione, con implicazioni per la promozione di un invecchiamento in salute.

67. Expectancy effects on reading: Placebo-induced modulation of word and pseudoword processing

Simona Carbone¹, Sandro Franceschini¹, Sara Bertoni², Martina Mancarella³, Giovanna Puccio¹, Matteo Lulli⁴, Cristiano Termine³, Simone Gori², Andrea Facoetti¹

¹ Università di Padova

² Università di Bergamo

³ Università dell'Insubria

⁴ Università di Firenze

Mini-talk · Language, reading and music

Understanding how top-down mechanisms shape reading performance is a central challenge in bridging cognitive and brain-based accounts of reading and developmental dyslexia. Within this framework, expectancy effects - such as placebo and nocebo - represent a powerful yet underexplored source of modulation. In a within-subject, cross-over study, 102 young adults performed computerized word and pseudoword reading tasks while wearing sham glasses presented as capable of enhancing or impairing reading via frequency modulation. Expectations were induced through both explicit verbal instructions and implicit feedback-based learning. Behavioral (reaction times and accuracy), subjective, personality (Big Five), and physiological (pupil size and heart rate) measures were collected. Results showed that positive expectations significantly enhanced reading speed for both words and pseudowords, compared to baseline and nocebo conditions. No effects emerged on accuracy, physiological indices, or personality modulation, and conditioning procedures did not amplify expectancy effects beyond explicit instructions. These findings demonstrate that placebo effects extend to complex, high-level processes such as reading, probably via top-down attentional and predictive mechanisms. Within a predictive processing framework, expectations may bias attentional allocation and decision thresholds during reading. Crucially, these results have direct implications for both experimental

research and clinical practice: expectancy effects should be carefully controlled in reading interventions, but may also be strategically leveraged to enhance training outcomes in populations with reading difficulties. By highlighting the role of cognitive expectations in reading performance, this study contributes to ongoing efforts to integrate behavioral, cognitive, and neurobiological perspectives on reading.

68. Parenting Stress Predicts Children's Neural Sensitivity to Soft Vocal Prosody: A Mismatch Negativity Study

Giulio Carraturo¹, Benedetta Matarrelli², Niels Haumann³, Francesco Carlomagno⁴, Elvira Brattico³

¹ Università di Bari Aldo Moro, Dipartimento di Formazione, Psicologia e Comunicazione

² Università Pegaso

³ Università di Aarhus, Danimarca

⁴ Politecnico di Bari

Poster · Social cognition

Emotional prosody represents one of the primary channels through which children access others' affective states, and its neural processing is deeply influenced by the relational context with the caregiver from the earliest stages of development. The present study examines neural responses to emotional prosodic stimuli in 14 mother-child dyads of preschool age, using an EEG Mismatch Negativity (MMN/MMR) paradigm during hyperscanning (simultaneous recording of brain activity). During the auditory task, standard stimuli were occasionally replaced by three prosodic deviants: Angry, Sad, and Soft. The analyses investigated, on the one hand, the presence of shared neural patterns between mother and child as a function of emotional category and, on the other, the association between maternal stress and the amplitude of the child's MMR response. The results reveal a selective effect for the Soft condition. In this condition, true dyads showed a specific inverse neurophysiological coupling in fronto-central regions, which remained significant after Bonferroni correction. Furthermore, maternal stress was positively correlated with children's MMR amplitude for the same deviant, while no significant association emerged for the Angry or Sad conditions. This double specificity suggests that affiliative prosody, unlike negatively valenced prosody, is particularly sensitive to the specific relational history of the dyad. Taken together, the findings indicate that soft vocal signals represent a privileged window for investigating the influence of the early relational context on children's neural development.

69. Risk Perception on railway tracks: psychological dynamics among maintenance workers and train drivers

Elisabetta Catalano¹, Federica Biassoni¹

¹ Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

Mini-talk · Attention, perception and consciousness

Railway infrastructure maintenance workers and train drivers are two professional groups exposed to distinct but safety-critical risk situations. This mixed-methods study pursued two main aims: to explore the situations these workers identify as risky in their everyday professional activity, to examine their risk perception, and to develop a scenario-based tool able to capture context-specific cognitive representations of risk. A mixed-method design was employed. In the qualitative phase, separate focus groups were conducted with maintenance workers and train drivers. The situations

discussed by participants were used to build a set of real work-related risk scenarios, which were then included in an online survey, that collected socio-demographic and occupational information and included standardized measures of risk propensity, intolerance of uncertainty, behavioural inhibition and activation systems, decision-making styles, and work-related well-being. Quantitative data were analysed with IBM SPSS Statistics. Descriptive analyses, correlations, regression models, and group comparisons were performed. Results showed that risk perception varied across scenarios and professional profiles, suggesting that workers do not attribute the same level of criticality to all risk situations. Moreover, risk perception was associated with individual dispositions and work-related well-being, indicating that railway risk is not only represented as a technical or environmental issue, but also as an experience shaped by personal and organizational factors. The study contributes to research on occupational risk perception by proposing a context-sensitive tool grounded in workers' everyday experience and by highlighting the psychological and organizational dimensions involved in railway safety.

70. Nonparametric Analysis of Distractors Functioning in the ICAR-16

Leognano Ceraudo¹, Marco Tullio Liuzza²

¹ University Magna Graecia of Catanzaro, Department of Health Sciences

² University of Padova, Department of Developmental Psychology and Socialisation

Poster · Methodology

The copyright-protected nature of the intelligence measures imposes financial and methodological constraints that hinder large-scale collaborative research on this topic. The International Cognitive Ability Resources 16 (ICAR-16) was developed as a brief and public-domain measure of cognitive ability to address these limitations. We translated and validated this instrument in a young adult Italian-speaking sample (N=427), showing good psychometric properties. Nonetheless, a more comprehensive evaluation of item quality requires examining distractor functioning. To address this issue, a Nonparametric Item Response Theory (NIRT) approach was employed. Specifically, Option Characteristic Curves (OCCs) were used to model the probability of selecting each response option across levels of the latent trait. This approach enables the identification of non-functional distractors, defined as options that exhibit relatively flat response probabilities across ability levels. The results revealed the presence of non-functional distractors across multiple items within the instrument, suggesting the need for their revision or replacement to further enhance test quality. In addition, a Differential Item Functioning (DIF) analysis conducted at the option level showed no evidence of sex-related bias in response selection. Overall, these findings support the psychometric robustness of the Italian ICAR-16 while highlighting the added value of distractor-level analyses for a more nuanced and thorough validation of multiple-choice assessment tools.

71. Performance on a motion coherence task is affected by external and internal noise. A link between stochastic resonance and schizotypal traits

Roberta Cessa¹, Deniz Demirkapi¹, Giulio Contemori¹, Luca Battaglini¹, Leonardo Bertamini², Marco Bertamini¹

¹ University of Padua, Department of General Psychology

² University of St Andrews, School of Biology

Mini-talk · Attention, perception and consciousness

Stochastic resonance (SR) describes the counterintuitive phenomenon by which an optimal level of noise enhances the detection of subthreshold signals in nonlinear systems, including the human brain. Performance is shaped by the interaction between external noise and neural variability, and the position of the SR peak along the external noise axis can be used to infer an observer's internal noise. Schizophrenia has been associated with elevated neural noise, and converging evidence suggests that subclinical schizotypal traits lie on the same continuum (Nelson et al., 2013), making schizotypy a valuable proxy to probe how internal variability shapes perception. In this preregistered online study, 130 participants completed the O-LIFE questionnaire and a random dot kinematogram task. Motion coherence thresholds were individually calculated via an adaptive staircase. Participants then judged coherent motion across 14 dot numerosities (20–2000), spanning a logarithmic range of external noise. Performance was modelled with a generalized linear mixed model including polynomial terms for log-numerosity and schizotypy. A quadratic model provided the best fit, revealing a significant interaction between external noise and global schizotypy ($p = .043$), driven primarily by the Unusual Experiences subscale ($p = .003$). Higher schizotypy was associated with a leftward shift of the SR curve and higher coherence thresholds ($p < .001$), consistent with increased internal noise. Unusual Experiences was the most sensitive dimension, coherent with its perceptual nature and with accounts framing positive symptoms as the behavioural signature of a noisier sensory system (Gandal et al., 2012). Web-based psychophysics can thus capture early perceptual markers along the psychosis continuum.

72. Creative Writing in Digital Health: Effects on Distress, Well-Being, and Emotion Regulation in the lifespan

Denise Chiappetta¹, Barbara Colombo², Simona Caravita³, Giulia Fusi⁴

¹ "Magna Graecia" University of Catanzaro - Dep. of Health Sciences

² Fielding Graduate University - Program in Applied Psychological Sciences

³ Universitas Mercatorum - Dep. of Human and Social Sciences

⁴ University of Bergamo - Dep. of Human and Social Sciences

Poster · Life cycle (e.g., development and aging)

Prior literature has demonstrated that writing interventions are associated with significant psychological benefits. Among these, creative writing represents a promising and easily accessible tool for improving psychological well-being and emotional health. The Creative Virtual Quill project aims to evaluate the effectiveness of a two-week app-based creative writing training on perceived stress, psychological well-being, and emotion regulation exploring potential differences across age groups. The study involved 57 participants divided into adolescents (N=38; M=17.42, SD=0.64) and adults (N=19; M=33.16, SD=13.43), randomly assigned to an experimental group (creative writing training) or an active control group

(expressive writing training). Pre- and post-intervention measures included measures of psychological distress (DASS-21), psychological wellbeing (PWB-18), cognitive emotion regulation (CERQ-short). Preliminary analysis revealed significant changes over time: both groups showed reductions in both depression levels ($F=5.311$, $p=.025$) and maladaptive emotional regulation strategies ($F=9.321$, $p=.004$). Interestingly, the experimental group showed a significantly greater increase in the use of adaptive emotional regulation strategies compared to the control group ($F=6.053$, $p=.017$), suggesting that creative writing training may promote better management of emotional distress regardless of age. Finally, adolescents showed more pronounced reductions in anxiety and stress compared to adults, possibly due to either greater sensitivity to the App-writing intervention or higher baseline levels of psychological distress. Overall, the results suggest that writing-based interventions may contribute to reductions in psychological distress, supporting beneficial mental health outcomes. Notably, creative writing appears to promote more adaptive emotion regulation strategies, with potential positive implications for psychological well-being.

73. Scrolling and Stopping: Instagram Exposure and Inhibitory Control in a Pilot Study

Nicola Chinchella¹, Elena Gherri¹

¹ University of Bologna

Poster · Attention, perception and consciousness

As digital platforms increasingly shape everyday cognition, understanding how social media affects executive functions is a pressing challenge. Instagram may place unique demands on inhibition and self-regulation, yet this is a broadly unexplored field. In this study we aim at examining inhibition directly, to provide a more precise account of the immediate cognitive effects of social media exposure. The present pilot study examined whether brief Instagram exposure modulates inhibitory control, using a stop-signal paradigm. Thirty-four adults completed two priming conditions in a counterbalanced design: Instagram browsing and poem reading on a smartphone. Each priming episode lasted 3 minutes and was paired with SST performance across repeated blocks. Within groups, the results revealed an order-dependent pattern. In the Instagram First group, Stop signal reaction time was significantly faster in the poem than in the Instagram condition, indicating more efficient inhibition. No similar effect was observed in the Poem First group. Go-trial omission errors were significantly greater in the Instagram than in the poem condition in the poem-first group, while no difference was observed in the Instagram-first group. No overall impairment emerged between groups. Both groups showed improved stopping performance in the second condition, consistent with practice-related adaptation. Although preliminary, by focusing on inhibition as a core executive function, this work can contribute to a more precise understanding of how social media shapes cognition in the moment. Ongoing data collection will strengthen this line of research, helping to clarify the mechanisms involved and the conditions under which these effects emerge.

74. Dynamic activation of visual and linguistic priors during memory encoding and retrieval

Laura Anna Ciaccio¹, Valentina Bianco¹, Silvia Angela Mansi¹, Paola Previtali¹, Daniele Gatti², Marco Marelli³, Marco Alessandro Petilli³, Luca Rinaldi¹

¹ Università di Pavia, Dipartimento di Scienze del Sistema Nervoso e del Comportamento

² Università degli Studi di Parma, Dipartimento di Medicina e Chirurgia

³ Università degli Studi di Milano-Bicocca, Dipartimento di Psicologia

Mini-talk · Language, reading and music

Recent research highlights the role of both linguistic and sensory information, particularly visual information, in shaping semantic knowledge (Ciaccio & Rinaldi, 2025). The integration of these different traces has been shown to vary depending on task constraints and stimulus modality, with this evidence being largely limited to behavior (Ciaccio et al., in preparation; Petilli et al., 2025). The present study aims to systematically characterize the dynamic contribution of linguistic and visual experience to semantic knowledge at the neural level. We recorded EEG responses while participants were presented with words and images in a memorization task, followed by a recognition phase. For all stimuli, we derived measures of linguistic and visual information from state-of-the-art computational models and combined these with EEG data across successive 10-ms time bins using Representational Similarity Analysis (RSA). Results show that neural activity patterns during the encoding of both words and images align with both linguistic and visual information. Crucially, the timing and strength of these activations vary systematically as a function of stimulus modality: during image encoding, stronger visual effects precede linguistic effects, whereas the opposite pattern emerges for words. Ongoing analyses are examining whether the neural activation of visual and linguistic traces during encoding predicts subsequent retrieval performance. Overall, the results provide evidence for a flexible multimodal semantic system.

75. Metodologie emergenti per lo studio delle dinamiche emotive: tra traiettorie spazio-temporali, complessità affettiva e innovazione sperimentale

Pietro Cipresso¹

¹ University of Turin

Simposio · Methodology

Le emozioni non possono più essere considerate stati statici e isolati, ma devono essere comprese come fenomeni dinamici che si evolvono nel tempo e si distribuiscono nello spazio, emergendo dall'interazione continua tra individuo e ambiente. Questo cambio di prospettiva ha favorito lo sviluppo di approcci teorici e metodologici orientati allo studio delle dynamical affect systems, in cui traiettorie emotive, transizioni tra stati e variabilità intra-individuale diventano elementi centrali di analisi. Il presente simposio esplora la dinamica delle emozioni attraverso tre livelli complementari. In primo luogo, un contributo scienziometrico analizzerà come la letteratura abbia concettualizzato e studiato le dinamiche affettive nel tempo, identificando sviluppi teorici, metodi emergenti e direzioni future. In secondo luogo, verrà approfondito il ruolo delle emozioni complesse, come la nostalgia, intese come configurazioni affettive che si snodano lungo traiettorie temporali articolate e che integrano componenti cognitive, motivazionali e sociali. In terzo luogo, verrà proposto un avanzamento metodologico che ridefinisce la misurazione del comportamento affettivo. Il comportamento è concepito come

output di un sistema dinamico, studiabile attraverso perturbazioni controllate piuttosto che tramite osservazioni statiche. Verrà presentato un paradigma sperimentale implementabile in ambienti virtuali, in cui variabili quali incertezza, feedback sociale e carico cognitivo sono manipolate nel tempo, mentre comportamento e segnali fisiologici vengono registrati in modo continuo. Questo approccio consente di analizzare le risposte come traiettorie dinamiche e di distinguere tra modelli generativi alternativi. In tale contesto, saranno presentate evidenze preliminari sull'uso di ologrammi 3D dinamici come stimoli innovativi per l'assessment e la riabilitazione di processi cognitivo-emotivi. Il simposio mira a delineare un quadro multilivello delle dinamiche emotive, integrando teoria, metodi e applicazioni sperimentali.

76. Verso una misura dinamica del comportamento: un paradigma sperimentale basato su perturbazioni controllate

Pietro Cipresso¹

¹ University of Turin

Intervento in simposio · Methodology

La misurazione del comportamento umano nelle scienze psicologiche è tradizionalmente basata sull'osservazione di risposte in condizioni statiche o debolmente controllate, con l'obiettivo di stimare differenze individuali o relazioni tra variabili. Tuttavia, questo approccio fornisce un accesso solo indiretto ai processi che generano il comportamento, limitando la possibilità di identificare le dinamiche sottostanti. In questo contributo proponiamo un cambio di prospettiva: considerare il comportamento come l'output di un sistema dinamico che può essere studiato attraverso perturbazioni controllate. In questa prospettiva, la misurazione non consiste nella semplice registrazione di risposte, ma nell'osservazione di traiettorie comportamentali elicitate da interventi strutturati. Presentiamo un paradigma sperimentale implementabile in ambienti virtuali o simulati in cui le condizioni (ad esempio incertezza, feedback sociale o carico cognitivo) vengono manipolate in modo sistematico nel tempo, mentre il comportamento e segnali fisiologici vengono registrati in modo continuo. Questo approccio consente di analizzare le risposte come traiettorie dinamiche e di distinguere tra modelli generativi alternativi che risultano indistinguibili in condizioni osservative. Discutiamo le implicazioni metodologiche di questo paradigma in termini di disegno sperimentale, acquisizione dati e modellizzazione, mostrando come esso permetta di integrare psicologia sperimentale, analisi dinamica e approcci computazionali. Tale prospettiva apre la possibilità di sviluppare misure del comportamento più sensibili alle dinamiche temporali e alle interazioni tra individuo e ambiente.

77. Phase-Dependent Modulation of Cortico-Cerebellar Networks during Emotion Processing: an EEG-guided dual-site tACS study

Andrea Ciricugno¹, Chiara Ferrari², Renato Borgatti³, Zaira Cattaneo⁴

¹ IRCCS Fondazione Mondino

² Università di Pavia, Department of Humanities

³ IRCCS Mondino Foundation, Child Neurology and Psychiatry unit

⁴ Università di Bergamo, Department of Human and Social Sciences

Poster · Social cognition

Recent neuroscientific evidence has redefined the posterior cerebellum as a key hub within the social brain. Current findings support a functional medial-to-lateral gradient, where

paravermal sectors are involved in early stages of basic emotional processing, while (left) posterolateral regions contribute to more complex social-cognitive tasks at later stages. This specialization likely reflects the fact that these distinct cerebellar areas operate within different circuits, communicating with specific cortical regions. Across two studies, we employed EEG-guided high-definition dual-site transcranial alternating current stimulation (ds-tACS) to explore and modulate the contribution of these circuits in emotional processing. Specifically, ds-tACS was delivered to manipulate gamma-band phase synchronization between the paravermal posterior cerebellum and the right superior temporal sulcus (Study 1), and between the left posterolateral cerebellum and the dorsomedial prefrontal cortex (Study 2). Participants received three sessions: in-phase (0° lag) to synchronize endogenous oscillations, anti-phase (180° lag) to desynchronize neural oscillations, and sham, while performing an emotion discrimination task and two control tasks. Our results reveal crucial insights into the electrophysiological mechanisms underlying cortico-cerebellar communication during emotional processing, demonstrating that the modulation of these circuits is both phase-dependent and task-specific. This work represents the first study to provide direct causal evidence that social-emotional processing relies on the precise temporal coordination of oscillations within specific cerebellum-cortical networks. Furthermore, our findings prove that non-invasive modulation of functional connectivity within cortico-cerebellar networks is feasible, offering promising implications for the development of novel rehabilitative treatments for social-cognitive deficits.

78. Emotion and “academic procrastination”

Laura Coco¹, Leonardo Noto¹, Anna Schepis¹, Elisabetta Sagone², Marinella Coco²

¹ Università di Catania

² Università di Catania, Dipartimento di Scienze della Formazione

Mini-talk · Emotions and motivation

Procrastination is a widely spread phenomenon which negatively affects the quality of life of millions of people, especially students in the academic context, in which procrastination is defined as “academic procrastination”, and is often related to other psychological dimensions, such as self-esteem, self-efficacy, and anxiety. The aim of this study is to examine the relationship between decisional and general procrastination and correlated dimensions (self-esteem, self-efficacy, state anxiety and test anxiety) in the southern Italian university context. The study involved a sample of 343 university students attending the University of Catania. As scaling instruments we used the Italian version of the General Procrastination Scale, the Italian version of the Decisional Procrastination Scale, the Basic Self-Esteem Scale, the General Self-Efficacy Scale, the Y-1 form of the State-Trait Anxiety Inventory, and the Worry-Emotionality test. Pearson's correlation coefficient was used to investigate the relationship between variables. The results showed that both general and decisional procrastination were negatively correlated with self-esteem and self-efficacy, positively correlated with test anxiety, and positively correlated with state anxiety, with stronger correlations for decisional procrastination. All correlations were statistically significant. Regression and mediation analysis were also conducted to explore the relationship between variables. They pointed out self-efficacy mediates the relationship between self-esteem and decisional procrastination, between state anxiety and decisional

procrastination, and between test anxiety and decisional procrastination. Finally, the analysis showed that self-efficacy negatively predicts decisional procrastination. Therefore, in accordance with the findings of our cross-sectional study, procrastination should be understood as emotional regulation and self-perception issues.

79. Toward Early Identification of Cognitive Decline in Parkinson's Disease: A Predictive Framework Using Artificial Neural Network

Laura Colautti¹, Monica Casella², Matteo Robba³, Davide Marocco², Michela Ponticorvo², Paola Iannello¹, Alessandro Antonietti¹, Camillo Marra¹

¹ Università Cattolica del Sacro Cuore, Department of Psychology

² University of Naples "Federico II", Natural and Artificial Cognition Lab "Orazio Miglino", Department of Humanistic Studies

³ Università Cattolica del Sacro Cuore, Department of Psychology University of Mannheim, Area of Economic and Business Education

Poster · Life cycle (e.g., development and aging)

Cognitive impairment represents a critical non-motor symptom of Parkinson's disease (PD) that may emerge from the early stages of the disease, significantly affecting quality of life and disease management. As in literature manifold variables have been linked to cognitive impairment, identifying the most relevant predictors is crucial for the development of effective prevention strategies. Thus, the present study aimed to predict cognitive status at a 3-year follow-up (according to patients' scores on the Montreal Cognitive Assessment; MoCA) and to identify the baseline predictors that most strongly contribute to cognitive decline, considering a broad range of baseline data commonly used in clinical settings. A sample of 618 PD patients (60.5% males, age: 61.84 ± 9.65 years, education: 15.74 ± 3.55 years) was retrieved from the CPP Integrated Parkinson's Database. Data included neuropsychological, dopamine transporter imaging, and genetic variables. An artificial neural network (ANN) model was trained on baseline data to forecast cognitive outcomes over a 3-year follow-up period. The model demonstrated high sensitivity (0.91) in identifying patients at risk of cognitive decline at 3-year follow-up. The most influential predictors included baseline MoCA scores, memory performance, MDS-UPDRS Part III scores, and anxiety levels. These findings support (i) the multifactorial nature of cognitive decline in PD, (ii) the importance of integrating cognitive and non-cognitive variables to identify individuals at higher risk, and (iii) the potential of ANN-based models in supporting clinicians in the early detection and prevention of cognitive decline.

80. ATHOS: At The Origin of Sounds: neural entrainment to continuous speech before and after pediatric cochlear implantation

Francesca Collesei¹, Erica Iob², Alessandra Federici², Marta Fantoni³, Francesca Forlì⁴, Benedetta Bianchi⁵, Alessandro Scorpecci⁶, Eva Orzan³, Davide Bottari²

¹ Scuola IMT Alti Studi Lucca

² MoMiLab, IMT School for Advanced Studies Lucca, Italy

³ IRCCS materno infantile Burlo Garofolo, Trieste, Italy

⁴ Azienda Ospedaliero Universitaria Pisana, Pisa, Italy

⁵ Azienda Ospedaliera Universitaria Meyer, Firenze, Italy

⁶ Ospedale Pediatrico Bambin Gesù, Roma, Italy

Poster · Language, reading and music

In congenitally deaf individuals, early auditory deprivation affects language development. Cochlear implants (CI) provide great benefits for speech perception and language outcome, with earlier implantation linked to improved auditory cortical

development and better linguistic outcomes (Sharma et al., 2002; Niparko et al., 2010). A key open question concerns how the infant brain develops the ability to encode and synchronize with auditory and audiovisual features of natural speech following CI. Objective and noninvasive neural measures are required. Supported by Cochlear Ltd., we are conducting a multicenter longitudinal study examining neural speech processing in cochlear-implanted infants using electroencephalography (EEG). Seven pediatric hospitals and research centers across Italy are involved, aiming to map the developmental trajectory of neural responses to continuous, naturalistic speech during the first year of CI use. Each 15-minute session includes two conditions: auditory-only (audiobook listening) and audiovisual (speaker face). EEG is recorded at four time points: pre-surgery (T0), shortly after CI activation (T1), three months (T3), and one year post-activation (T5). We computed Temporal Response Functions (TRFs) to assess neural synchronization with the speech envelope on data from 10 participants (9–22 months). The TRF models show higher correlation (r) between predicted and observed responses already three months after implantation, indicating improved model fit and stronger brain–speech synchronization compared to T0 and T1. These findings support EEG-based neural tracking as a promising biomarker of early auditory development following cochlear implantation, with implications for optimizing intervention and follow-up.

81. Neuroaesthetics as a novel approach to cognitive rehabilitation in Mild Cognitive Impairment

Francesca Colombi¹, Giulia Fusi², Maura Crepaldi², Enrico Selini², Marina Zanetti³, Ignazio Di Fazio³, Igor Sotgiu², Lisa Fellin², Maria Luisa Rusconi²

¹ Università degli Studi di Bergamo, Dipartimento di Scienze Umane e Sociali

² Department of Human and Social Sciences, University of Bergamo

³ Geriatric Evaluation and Rehabilitation Unit Richiedei Foundation, Palazzolo sull'Oglio, Brescia, Italy

Intervento in simposio · Methodology

Mild Cognitive Impairment (MCI) represents a stage between physiological and pathological ageing with a risk of progression to dementia. Non-pharmacological treatments are relevant to prevent and slow cognitive decline and studies in neuroaesthetics suggest that preferred music can enhance attention and motivation. The aim of this study is to integrate a neuroaesthetics module into a cognitive telerehabilitation protocol and assess its effects on cognitive and psychological variables in MCI. 12 MCI patients were randomly assigned to the experimental ($n=5$; age: 75.40 ± 5.94) or the control ($n=7$; age: 78.57 ± 5.31) group. The protocol consisted of two weeks of online cognitive stimulation training: five weekly sessions of 30 minutes of cognitive training and 15 minutes of a neuroaesthetic module (PleaseMe) based on self-selected music playlists, before or after the training. All participants underwent a neuropsychological assessment pre and post intervention. Non-parametric analyses indicate reduced anxiety levels, high engagement and lower boredom during training in the experimental group. Moreover, an improvement in attentional reorientation and automatic response inhibition has been observed: in the Posner task, experimental group showed a trend toward reduction in total errors ($p=.068$; $Mpre=14.80 \pm 5.24$; $Mpost=12.15 \pm 3.15$) and faster reaction times in valid trials ($p=.063$; $Mpre=1.227 \pm 0.325$; $Mpost=1.045 \pm 0.373$), along with improvement in invalid trials

($p=.031$; $Mpre=1.327\pm0.496$; $Mpost=1.099\pm0.289$), with no comparable changes in controls. The integration of self-selected music into cognitive stimulation protocols in telerehabilitation has the potential to enhance concentration and motivation. Although these findings are preliminary and require confirmation in larger samples, they support the possibility of incorporating neuroaesthetics into cognitive telerehabilitation programmes.

82. From Strategy to Action: Analyzing Planning in aging through the Tower of London

Ilaria Corbo¹, Giuseppe Forte¹, Francesca Favieri², Maria Casagrande¹

¹ Sapienza, Department of Dynamic and Clinical Psychology, and Health Studies

² University "G. d'Annunzio" of Chieti-Pescara, Department of Psychology

Poster · Life cycle (e.g., development and aging)

Planning is a fundamental executive function that involves organizing behavior through intermediate steps to achieve a goal. This process consists of two phases: plan formulation and monitoring of execution. Because the prefrontal cortex undergoes age-related atrophy, executive functions such as planning often show a significant decline. The hypothesis of this study is that older adults exhibit a decline in planning abilities compared to adults, particularly regarding decision time (the time spent formulating a mental strategy before initiating action) in the Tower of London (ToL). A total of 174 participants took part in the study. The sample was divided into two age groups: Adults ($N=91$; age: 57.2 ± 4.45) and Older Adults ($N=83$; age: 70.2 ± 4.20). A series of mixed-design ANOVA analyses were conducted, revealing a significant main effect of group on decision time ($p = 0.02$), indicating that older adults take significantly longer to formulate their strategies than adults. Although decision time increased for both groups as task complexity increased, older participants showed a more pronounced slowdown in the difficult trials. It is interesting to note that, despite these longer decision times, total scores and rule violations did not show significant differences between the groups, suggesting that the increase in decision time among older adults may serve as a compensatory mechanism to maintain accuracy. These results highlight that aging primarily affects the efficiency of the initial formulation phase rather than the quality of the final plan.

83. Structure Before Content: A Psychogeometric Approach to Personality

Giulio Costantini¹, Gabriele Limonta¹

¹ Università degli Studi di Milano-Bicocca

Mini-talk · Methodology

Dominant models of personality structure are grounded in the psycholexical hypothesis, assuming that socially relevant individual differences become encoded in language. Although this approach has generated taxonomies such as the Big Five and HEXACO models, it begins from predefined descriptors or items. This project introduces and tests the Psychogeometric Hypothesis, according to which socially relevant differences are encoded in the geometry of perceived interpersonal similarity. Rather than asking which traits people endorse, our approach starts from how people locate individuals in psychological space. In a preregistered study, $N = 168$ Italian participants listed 15 adults they knew well and rated the personality similarity of all target pairs, including themselves. Participants also provided demographic information and informant

personality ratings for each target using a brief Big Five measure complemented by Honesty-Humility items. Non-metric multidimensional scaling was applied to judge-specific similarity matrices, whereas linear mixed-effects models tested whether trait differences predicted similarity judgments above demographics. Results supported the main preregistered hypotheses. MDS revealed a median five-dimensional structure, showing that the dimensionality of personality perception can be reconstructed from similarity data. LMMs showed that Big Five differences explained perceived similarity above and beyond demographics, and that Honesty-Humility accounted for additional variance beyond both demographics and the Big Five. These findings corroborate the relevance of the HEXACO model, provide a first demonstration of the validity of the psychogeometric hypothesis, and introduce a novel methodological approach for investigating personality structure, offering a new route for studying both established and overlooked personality dimensions.

84. Does robot-mediated assessment influence cognitive performance in individuals with ASD?

Nicole Covone¹, Margherita Attanasio², Illenia Le Donne³, Marco Valenti⁴, Monica Mazza⁴

¹ Università degli Studi dell'Aquila - Dipartimento di Scienze Cliniche, Applicate e Biotecnologiche

² Dipartimento di Scienze Teoriche e Applicate (DiSTA) Università degli Studi e-Campus

³ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche, Applicate e Biotecnologiche

⁴ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche, Applicate e Biotecnologiche; Centro di Riferimento Regionale per l'Autismo (CRRRA), Regione Abruzzo, ASL1

Mini-talk · Methodology

Introduction. This study investigates whether administration modality (paper-and-pencil vs social robot Pepper) affects cognitive performance and physiological responses in individuals with Autism Spectrum Disorder (ASD). Method. Prior to the main study, a preliminary evaluation on 34 individuals with ASD was conducted to compare paper-based and tablet-based administrations and inform the development of the robot-mediated condition. Fourteen participants with ASD then completed a nonverbal cognitive task either in traditional format or via the humanoid robot Pepper. Accuracy, reaction times (RT), and physiological activation (ΔBPM) were analysed using Mixed-Effects Models, considering item complexity. Results. The administration modality did not significantly affect accuracy or reaction times. Item complexity had a significant effect on performance. A significant interaction between modality and complexity emerged: the robot-mediated condition showed lower initial physiological activation and a more favorable pattern at higher levels of difficulty, with a tendency toward improved performance and reduced reaction times. Conclusions. Robot-mediated administration is comparable to traditional testing and may support engagement in more demanding conditions. These findings highlight the potential of social robots as tools for cognitive assessment in ASD.

85. Flourishing in emerging adults: The role of character strengths, life project reflexivity, and self-compassion

Giulia Cremaschi¹, Daniela Villani¹, Anna Flavia Di Natale¹

¹ Università Cattolica del Sacro Cuore di Milano, Dipartimento di Psicologia

Mini-talk · Emotions and motivation

Emerging adults perceive the future as unstable, often feeling destabilized to plan their lives. In this context, self-knowledge is fundamental for defining authentic life projects and promoting flourishing. In particular, several self-knowledge facets have been recognized for their contribute to this aim: character strengths' use allows individuals to maximize their potential and wellbeing; reflexivity facilitates authentic planning aligned with personal values and strengths; finally, self-compassion is crucial to promote a kind attitude toward oneself during the challenges of this developmental phase and to encourage realistic self-evaluation. The combined impact of these variables on flourishing remains uninvestigated. This study investigates the specific contribution of strengths use, life project reflexivity, and self-compassion on flourishing in emerging adults. Data were collected via an online survey from 363 participants aged 18-30. Instruments included the Strength Use Scale (SUS), the Life Project Reflexivity Scale (LPRS), the Self-Compassion Scale (SCS), and the Mental Health Continuum–Short Form (MHC-SF). In order to test the predictions, a hierarchical multiple regression was conducted, with three blocks of variables. Inclusion of variables increased explained variance ($p < .001$). In the first block, SUS accounted for 34.9% of variance ($\Delta R^2 = .349$). Adding LPRS explained an additional 2.2% of the variation. Finally, SCS added a further 5.3%. The final model was robust, explaining 42.4% of flourishing variance ($\Delta R^2 = .424$; $F(3, 354) = 32.8$, $p < .001$). Findings demonstrate that character strengths' use, reflexivity, and self-compassion significantly predict flourishing, highlighting their specific role in enhancing psychological well-being.

86. The body in body-building: effects of a neuroempowerment training on posing performance and self-awareness

Davide Crivelli¹, Laura Angioletti¹

¹ International Research Center for Cognitive Applied Neuroscience (IrcCAN), Università Cattolica del Sacro Cuore

Mini-talk · Health, sport and wellbeing

Competitive bodybuilding involves not only aesthetic presentation but also motor control, self-regulation, and body-related psychological awareness. Specifically, posing represents a complex skill requiring technical precision, movement fluency, postural control, and the capacity to inhabit the body confidently during performance. The present study aimed to validate an experimental neuroempowerment protocol for female bodybuilding athletes by testing the effects of an integrated intervention combining Action Observation and Motor Imagery (AOMI) with self-compassion practices. Twenty aspiring female Bikini competitors were randomly assigned to either an experimental group receiving AOMI plus self-compassion training or an active control group receiving AOMI alone. The study adopted a longitudinal pre-post design, including pre-training assessment, 4-week training, and post-training assessment. Outcomes included expert blind ratings of posing performance (biomechanical precision, transition fluency, isometric control, stage presence/embodiment, and timing/rhythm), as well as psychometric indices of body satisfaction, self-esteem, and body investment. Data analysis showed significant pre-post improvements across most variables, indicating a general training effect. However, robust Group×Time interactions emerged for transition fluency, stage presence/embodiment, and timing/rhythm, with greater improvements in the experimental group than in the active control group. A

significant interaction also emerged for body investment, suggesting a selective modification in body-related psychological experience following the integrated intervention. Overall, the findings suggest that integrating self-compassion into an AOMI-based posing protocol may selectively enhance embodied-expressive dimensions of performance beyond general technical practice. These results support the potential value of multidimensional interventions targeting both motor learning and body-related regulation in physique sports.

87. My thermal position: Thermosensory modulation of the hand shapes its spatial location

Francesco Crottini¹, Ayla Gay², Jonatan Muheim³, Shokur Solaiman³, Andrea Serino⁴, Gerardo Salvato¹, Gabriella Bottini¹, Michela Bassolino²

¹ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

² School of Health Sciences, HES-SO Valais-Wallis, Switzerland

³ Translational Neural Engineering Laboratory (TNE Lab), Neuro-X Institute, EPFL, Geneva, Switzerland

⁴ MySpace Lab, Department of Clinical Neurosciences, University Hospital of Lausanne, University of Lausanne, Lausanne, Switzerland

Intervento in simposio · Attention, perception and consciousness

Experimental and pathological alterations of bodily self-awareness (BSA) are associated with skin temperature changes and shifts in perceived position. Vice versa, altering limb temperature can influence ownership malleability. However, current evidence mainly addresses ownership and thermosensory interplay, underestimating the relevance of the interaction with spatial aspects of BSA. In this study, we focused on whether and how the ability to perceive the position (self-location) and dimension (body metrics) of the upper limb in the absence of vision can be influenced by thermosensory stimulation. We tested twenty-eight right-handed, neurotypical participants, asking them to localize four markers positioned on their hidden left arm (index fingertip, knuckle, wrist, and elbow), giving verbal cues to the experimenter who moved a stick with a reference marker (Body landmarks localization task). Real and perceived positions were recorded and compared through a motion capture system (VICON). Each participant performed the task during three thermal stimulation conditions, applied to the palm of their hand with an innovative custom-made Peltier-like device: neutral (no stimulation), cooling (-5°C), and heating ($+5^{\circ}\text{C}$) conditions. The results show that the cooling condition induces a worsening of the localization error towards the body midline compared to the other conditions for index and knuckle landmarks. Conversely, thermosensory stimulation did not significantly alter the perception of body metrics. These results show that, beyond ownership, thermosensory stimulation may alter Self-location. This highlights the interplay of body self-awareness, thermosensory, and spatial processing, enhancing the understanding of pathological alterations of BSA and neuroprosthetic development.

88. The Self as Body: Neuropsychological Perspectives on Bodily Self-Awareness

Francesco Crottini¹, Francesca Frisco², Carlotta Maiocchi³, Marcella Romeo⁴

¹ Università degli Studi di Pavia, Dipartimento di Scienze del Sistema Nervoso e del Comportamento

² Università di Milano-Bicocca

³ IUSS Pavia

⁴ Università di Torino

Simposio · Attention, perception and consciousness

From a neuropsychological perspective, the set of subjective sensations individuals feel about their own body contributes to the formation of Bodily Self-Awareness (BSA). Among these phenomenological experiences, we report the feeling of being the agents of our actions (agency), the sensation that our body belongs to us (body ownership), and the experience of being a body with a position in space (self-location). Neuroscientific literature shows that these phenomenological experiences emerge from the multisensory integration of neural signals originating from within and outside the body. This symposium will provide an overview of how neuroscientific research can help clarify the mechanisms underlying bodily self-awareness. In the first talk, Carlotta Maiocchi (Scuola Universitaria Superiore IUSS - Pavia) will introduce the core principles of multisensory integration and their role in shaping body ownership, focusing on electrophysiological correlates measured through EEG. Francesca Frisco (University of Milano-Bicocca) will focus on the spatial aspects of bodily awareness, exploring the relationship between body spatial predictions and body ownership. Marcella Romeo (University of Turin) will explore BSA and its components across a continuum from healthy individuals to full-blown psychiatric conditions, including borderline personality disorder and eating disorders. Finally, Francesco Crotti (University of Pavia) will highlight the role of thermosensory signals in BSA. Taken together, these talks will offer a comprehensive neuropsychological view of how different components interact and intersect, across implicit and explicit dimensions, generating a coherent and unified awareness of the Self as body: own, acted, in the world.

89. Italian validation of the Highly Sensitive Person Scale–Revised (HSP-R)

Nicla Cucinella¹, Angela Giugovaz², Costanza Baviera³, Irene Florean², Cristiano Inguglia¹, Francesca Lionetti⁴, Stefano Livi⁵, Mara Marini⁵, Chiara Parisse⁵, Michael Pluess, Laura Prislei, Sofia Sorvillo, Silvia Trentin, Sonia Ingoglia, Marzia Saglietti, & Barbara Penolazzi

¹ Department of Psychology, Educational Science and Human Movement, University of Palermo

² Department of Life Sciences, University of Trieste

³ Department of Research and Innovation in Humanities, University of Bari Aldo Moro

⁴ Department of Brain and Behavioural Sciences, University of Pavia

⁵ Department of Developmental and Social Psychology, Sapienza University of Rome

Poster · Methodology

Environmental Sensitivity is increasingly conceptualized as a multidimensional construct, leading to the development of revised instruments aimed at capturing its complexity more accurately. Within this framework, Sensory Processing Sensitivity (SPS) represents a key individual trait reflecting heightened sensitivity to environmental stimuli. The Highly Sensitive Person Scale–Revised (HSP-R; Pluess et al., 2026) is a newly developed 18-item self-report measure assessing six facets of SPS. To date, no validated Italian version is available. The present study examined the factor structure of the Italian HSP-R in a sample of adults (N = 519) randomly split into two independent subsamples. In the first subsample (n = 260), an Exploratory Factor Analysis (EFA) suggested a five-factor solution. In the second subsample (n = 259), Confirmatory Factor Analyses (CFA) were performed to compare a single-factor model, the original six-factor model, a bifactor model with six specific factors, and the empirically derived five-factor solution. Results indicated that the single-factor model showed poor fit, supporting the multidimensionality of

SPS. The six-factor correlated model demonstrated an acceptable fit, whereas the empirically derived five-factor solution did not improve model fit. Notably, the bifactor model with six specific factors showed a better fit relative to the correlated-factor solution (CFI = .92, TLI = .88, RMSEA = .055, SRMR = .047), supporting a representation of SPS characterized by a dominant general factor alongside specific dimensions. Overall, findings provide preliminary support for a hierarchical conceptualization of SPS in the Italian context and contribute to ongoing cross-cultural validation efforts of the HSP-R.

90. Determinants of caregiver burden in advanced Parkinson's Disease: a multidimensional and sex-sensitive perspective

Laura Culicetto¹, Lilla Bonanno¹, Giulia Marafioti¹, Fabio Mauro Giambò¹, Giuseppe Di Lorenzo¹, Carmelo Mario Vicario², Angelo Quartarone¹, Silvia Marino¹, Viviana Lo Buono¹

¹ IRCCS Centro Neurolesi Bonino Pulejo, Messina

² Università degli Studi di Messina, Dipartimento di Scienze Cognitive, Psicologiche, Pedagogiche e degli Studi Culturali

Mini-talk · Life cycle (e.g., development and aging)

Parkinson's disease (PD) is a progressive neurodegenerative disorder whose advanced stages place significant demands on informal caregivers. Although functional and cognitive decline contribute to caregiver strain, the role of sex remains poorly understood. This study examined associations between patient characteristics and caregiver burden and explored sex-sensitive patterns. Thirty-eight individuals with advanced PD and their primary caregivers were assessed. Patients underwent neuropsychological evaluation including Mini Mental State Examination (MMSE), Hamilton Rating Scales for Anxiety and Depression, Pittsburgh Sleep Quality Index (PSQI), Parkinson's Disease Questionnaire (PDQ-39), and Activities of Daily Living (ADL/IADL) scales. Caregiver burden was measured with Caregiver Burden Inventory (CBI). Associations were tested using Spearman's rank correlations with false discovery rate correction, and analyses were stratified by patient sex. Lower patient autonomy was significantly associated with greater caregiver burden, particularly for IADL ($p = -0.67$, FDR $p < 0.001$) and ADL ($p = -0.64$, FDR $p < 0.001$). Worse quality of life, especially PDQ-39 mobility and ADL domains, was also related to higher burden ($p = 0.53$ and 0.54 , respectively; both FDR $p = 0.01$). Female patients showed higher anxiety and poorer emotional well-being than male patients, but these features were less closely related to caregiver burden. In contrast, in male patients, functional decline showed stronger associations with caregiver burden and caregiving time. Female caregivers showed stronger links between patient dependence and burden. Functional decline, cognitive impairment, and reduced QoL in advanced PD increase caregiver burden, with sex influencing these relationships. Sex-sensitive, multidisciplinary interventions are needed.

91. Il ruolo della cardiocezione nei processi decisionali estetici: uno studio pilota

Maria Cuomo¹, Gerardo Salvato¹, Gabriella Bottini¹

¹ Università di Pavia

Mini-talk · Emotions and motivation

Percepire i segnali corporei, come i battiti cardiaci, sembra influenzare le decisioni in situazioni di rischio. E' meno noto il ruolo di questa percezione in altre condizioni. Abbiamo

esaminato il ruolo della cardiocezione nelle decisioni estetiche relative all'interior design. In un disegno a misure ripetute, 23 volontari hanno espresso la loro intenzione d'acquisto di configurazioni di design d'interni che variavano per tipologia di stanza (salotto vs studio), volumetria (ampia vs ridotta), colore (neutro vs caldo vs freddo) e forma degli arredi (lineare vs curvilinea). L'accuratezza interocettiva per il battito cardiaco (IACC) è stata misurata tramite l'Heartbeat Counting Task, confrontata con un compito esteroceettivo (percezione uditiva) di controllo. I risultati indicano che, all'aumentare dell'accuratezza interocettiva (rispetto alle abilità esteroceettive) diminuiva l'intenzione di acquisto di ambienti con tonalità cromatiche fredde, rispetto a quelli caratterizzati da toni neutri. Inoltre, una maggiore accuratezza interocettiva si associa a una preferenza per arredamenti dalle forme curvilinee posizionate nello studio rispetto al salotto. Questi risultati preliminari indicano che le decisioni in ambito estetico dipendono anche dalla percezione di segnali corporei, che potrebbero influenzare la scelta sia cognitivamente sia emozionalmente.

92. Cognitive and Emotional Biases in Judgment Construction for Psychoforensic Contexts

Antonietta Curci¹, Tiziana Lanciano¹

¹ University of Bari Aldo Moro, Department of Education, Psychology, Communication

Intervento in simposio · Emotions and motivation

Through two experimental studies, the present work investigates how judgments about social and moral events are influenced by the interaction between cognitive and emotional biases, contributing to processes of distortion and polarization in psychoforensic contexts. In particular, we hypothesized that judgments do not arise from an objective evaluation of the available information, but rather constitute a constructive process influenced both by external contextual elements (e.g., misinformation or state emotions) and by individual dispositions (e.g., affective traits). In Study 1 (N = 184; 65.8% women; M = 27.61 ± 10.80), participants were exposed to a socially ambiguous interaction (teacher–student involving physical contact), followed by misleading versus neutral post-event information. Subsequent evaluative judgments were measured across two test–retest sessions. Results show that misinformation biases judgments toward more severe evaluations, with effects moderated by gender bias. In Study 2 (N = 204; M = 27.70 ± 10.09), the role of incidental emotions -- both trait and state (anger vs. guilt vs. neutral) -- in shaping social judgments was examined, based on the evaluation of a forensically relevant situation. Results indicate that trait emotions significantly influence attributional and evaluative processes. Overall, both studies suggest that cognitive factors (misinformation) and affective factors (incidental emotions) operate as converging biases in the construction of judgment, transforming ambiguous situations into interpretations consistent with individual expectations and dispositions. These processes contribute to the formation of polarized evaluations, with important implications for applied psychoforensic contexts.

93. Theory of Mind in Daily Life: Perceived Use in Conversations Predicts Conversational Quality and Well-Being in Younger and Older Adults

Federico Curzel¹, Lara Fracassi², Chiara Barattieri di San Pietro³, Edelweiss Stella², Tatiana Rodella², Alessia Rosi², Valentina Bambini³, Serena Lecce², Elena Cavallini²

¹ Università di Pavia

² Department of Brain and Behavioral Sciences, University of Pavia

³ Laboratory of Neurolinguistics and Experimental Pragmatics (NEP), University School for Advanced Studies IUSS, Pavia

Mini-talk · Life cycle (e.g., development and aging)

Theory of Mind (ToM), the ability to attribute mental states to oneself and others, plays a central role in everyday social functioning and well-being. Yet, it has been predominantly investigated through laboratory-based tasks, with limited evidence on its real-world use across aging. This study combined Ecological Momentary Assessment (EMA) with laboratory-based measures to examine how ToM abilities and perceived use in conversations impact the quality of social interactions (i.e., pleasure and closeness) and momentary well-being in younger (N = 77; 25.2 ± 3.5 years) and older adults (N = 69; 72.7 ± 5.2 years). Perceived ToM use did not differ between age groups (p=.717), nor correlated with laboratory assessments (ps>.090). Moreover, ToM abilities were unrelated to conversational quality outcomes (ps>.155). In contrast, higher perceived ToM use when interacting with unfamiliar partners predicted greater pleasure and closeness compared to friends (both age groups, ps<.049), and family members (younger adults, p<.001). Interestingly, conversational pleasure predicted higher momentary well-being when conversing with unfamiliar partners versus others in younger adults (p=.005), and with family members versus others in older adults (p=.022). Additionally, greater closeness with friends predicted higher momentary well-being in both age groups (ps<.043). Importantly, among older adults, when closeness with family members was low, greater perceived ToM use was associated with higher momentary well-being (p=.019). Overall, these findings highlight the importance of perceived ToM use in daily life, revealing context-dependent and age-related patterns in its association with the quality of social interactions and well-being, with potential practical implications for older adults' social functioning.

94. From Face Perception to Social Categorization: A Multidimensional Scaling Approach to Investigate Ethnic Outgroup Homogeneity in Childhood

Luca Cussigh¹, Luigi Castelli¹, Luciana Carraro¹

¹ Università di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione

Mini-talk · Social cognition

According to the Perceptual-Social Linkage Model (Lee et al., 2017), asymmetries in infants' visual experience shape subsequent social biases. Visual specialization for ingroup faces leads individuals to perceive the outgroup as visually more homogeneous (Outgroup Homogeneity Effect, OHE). Alongside the OHE, recent research highlights a Minority-Groups Homogeneity Effect (Tepper & Gilovich, 2024): majority group members perceive their ingroup as less homogeneous even when compared to individuals from two distinct minority outgroups. To date, this effect remains unexplored in childhood and at the level of basic face perception. To explore this phenomenon, we developed an

innovative tool to measure perceived visual similarity, adapting a consciousness paradigm (Moriguchi et al., 2025) for 3- to 8-year-old children. The task requires participants to evaluate the perceived similarity of facial dyads, including ingroup faces and faces from three distinct ethnic outgroups. Data are analyzed using Multidimensional Scaling (MDS), an approach previously used in Face-space theory. MDS yields a bidimensional spatial map where topographical distances reflect the perceived similarity between stimuli, thus capturing their mutual interaction. In addition, a trait attribution task was employed to assess children's attitudes toward the same faces. Methodologically, this study introduces a visual analytical technique (MDS) potentially capable of mapping the boundaries of children's social categories. Theoretically, it represents the first empirical attempt to explore the Minority-Groups Homogeneity Effect during development at the level of basic face perception, providing a novel lens to understand how children begin to structure the perceptual space between the majority and minority groups.

D

95. "I Feel I Don't Have Enough": Measuring Perceived Resources Scarcity in Italy

Chiara Barbara Dadà¹, Paola Iannello²

¹ Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

² Università Cattolica del Sacro Cuore, Milano, Dipartimento di Psicologia

Poster · Methodology

Perceived resource scarcity refers to the subjective experience of having insufficient resources to meet one's needs or achieve desired goals, regardless of objective availability. This perception affects cognitive functioning and decision-making, giving rise to present bias, tunnelling, and reduced cognitive bandwidth. Despite its relevance, existing measures fail to capture the multidimensional and context-dependent nature of perceived scarcity. The present study describes the development and validation of a novel scale assessing perceived scarcity within the Italian context. The scale encompasses three domains: time, financial, and social resources. 45 items were developed based on theoretical and empirical literature. Content validity was evaluated by seven independent experts in psychology and psychometrics, followed by a pre-test phase involving 10 cognitive interviews to assess clarity and face validity. The scale was administered to a sample of 300 Italian adults aged 18–60. Data were used to perform item reduction to achieve a parsimonious and internally consistent measure. Exploratory and confirmatory factor analyses were conducted to examine dimensionality, alongside assessments of reliability and construct validity, including convergent and discriminant validity. Preliminary results supported a three-factor structure reflecting time, financial, and social scarcity. A key contribution of this work lies in the integrated examination of multiple scarcity domains, particularly social resources, which remain underexplored in literature. The study extends theoretical frameworks and provides a culturally grounded tool for the Italian population, enabling analysis of independent and interactive effects of scarcity on decision-making and behavior. The instrument offers practical implications for interventions targeting scarcity-driven decision-making, with applications in policy design and well-being promotion.

96. Electrophysiological markers of neural workload in middle managers under social-evaluative stress

Angelica Daffinà¹, Domenico Gambino¹, Michela Balconi¹

¹ International Research Center for Cognitive Applied Neuroscience (IrcCAN), Università Cattolica del Sacro Cuore, Milan, Italy

Poster · Emotions and motivation

Exposure to socially evaluative stress requires dynamic regulation of cognitive and emotional resources. Neurofunctional models suggest that stress elicits phase-dependent shifts in oscillatory brain activity depending on situational demands. This study investigated how electroencephalographic (EEG) activity reflects neural workload across preparatory and speech phases under progressively increasing social stress. Twenty-three middle managers (Age_{mean}=45.9; DS=11.94) delivered speeches to progressively critical evaluation panels, during which EEG activity was recorded from frontal (F) and temporoparietal (TP) regions, analyzing delta, theta, alpha, beta, and gamma bands. Behavioral responses were analyzed to define stress regulation-tolerance score. Repeated-measures ANOVAs tested the effects of ROI (F, TP) and phase (preparation vs. speech) on EEG bands, and correlations were computed between EEG and behavioral measures. Results showed that during preparation, delta, theta, and alpha power increased with scenario difficulty; a similar pattern emerged during speech, with delta and theta increasing as task demands intensified. A significant ROI × Speech interaction was found for gamma, with higher TP activity compared to F in the intermediate condition, and higher TP activation in the intermediate than in the highest stress condition. Moreover, frontal EEG activity was negatively correlated with stress regulation and tolerance across phases. Results suggest that increasing social-evaluative demands are associated with higher neural workload, reflected in enhanced low-frequency activity and region-specific recruitment. Higher frontal activity suggests regulatory effort and is associated with reduced stress regulation-tolerance, highlighting the cost of sustained neural engagement under social-evaluative stress.

97. La conoscenza pregressa e l'interpretazione deterministica come modulatori del giudizio causale in compiti di apprendimento associativo

Stefano Dalla Bona¹, Michele Vicovaro¹

¹ Università degli Studi di Padova (UNIPD), Dipartimento di Psicologia Generale (DPG)

Mini-talk · Reasoning and abstract cognition

I giudizi causali nei compiti di apprendimento associativo sono tipicamente studiati usando delle narrazioni (ovvero, delle cover stories), che si presume fungano da "veicoli" neutri per trasmettere informazioni statistiche che i partecipanti devono valutare per rispondere. Tuttavia, le caratteristiche contestuali di queste narrazioni possono elicitare (i) aspettative pregresse sulla forza della relazione causale e (ii) un'interpretazione deterministica piuttosto che probabilistica del contesto causale, influenzando l'inferenza causale al di là delle sole informazioni di contingenza. Per esaminare queste influenze, abbiamo progettato tre cover stories che variavano (i) per intensità delle aspettative circa la presenza di una relazione causale e (ii) per l'interpretazione deterministica vs. probabilistica della narrazione, testandole in condizioni di contingenza nulla ed illusoria (Esperimento 1, $\Delta P = 0$) e positiva (Esperimento 2, $\Delta P = 0,50$). Per ciascun esperimento sono stati reclutati 195 partecipanti (Bayes Factor design analysis), in un disegno tra

soggetti (pre-registrato su OSF). Le cover stories hanno influenzato sostanzialmente i giudizi causali in entrambi gli esperimenti, mostrando come la conoscenza pregressa possa operare come fattore additivo nella valutazione dell'evidenza statistica, e come l'interpretazione deterministica o probabilistica imponga un'aspettativa di funzionamento capace di modulare i giudizi di causalità. Questi risultati indicano che le cover stories non sono "sfondi neutri", bensì contribuenti attivi al giudizio causale, con implicazioni per il modo in cui l'illusione di causalità e l'apprendimento causale in senso più ampio vengono interpretati e studiati.

98. Differenze culturali nella rappresentazione spaziale del tempo: Evidenze dalla percezione dell'età dei volti

Mario Dalmaso¹, Mohammad Erfanikia², Michele Vicovaro³, Juan Lupiáñez⁴, Marc Ouellet⁴

¹ Università di Padova, DPSS

² University of East Anglia

³ Università di Padova

⁴ Universidad de Granada

Mini-talk · Space, time and number

La cultura influenza profondamente il modo in cui le persone percepiscono e rappresentano il tempo. Ad esempio, è noto che la rappresentazione spaziale dei concetti temporali (es., ieri vs. domani) lungo l'asse laterale è correlata alle direzioni di lettura e scrittura. In questo studio abbiamo esplorato l'impatto della cultura sulla rappresentazione del tempo nel dominio sociale. In particolare, ci siamo concentrati sull'età del volto, una dimensione fondamentale durante l'elaborazione dei volti, e abbiamo confrontato due gruppi le cui lingue native seguono direzioni di lettura opposte: iraniani (da destra a sinistra) e italiani (da sinistra a destra). Entrambi i gruppi hanno svolto un compito comportamentale in cui dovevano categorizzare un volto presentato centralmente come più giovane o più anziano rispetto a un volto di riferimento, rispondendo tramite due tasti, uno posizionato a sinistra e l'altro a destra. I risultati hanno confermato la nostra ipotesi principale, mostrando che la rappresentazione spaziale dell'età del volto in entrambi i gruppi era coerente con la rispettiva direzione di lettura e scrittura. Inoltre, in entrambi i gruppi è emerso anche un effetto distanza, poiché le latenze diminuivano all'aumentare della differenza assoluta tra l'età del volto target e quella del volto di riferimento. Questi risultati forniscono nuove evidenze sul ruolo dei fattori culturali nel modellare la rappresentazione spaziale del tempo attraverso informazioni sociali.

99. Developing and validating a scale to measure the Perceived Value of public environments

Ottavia Damian¹, Margherita Brondino¹

¹ Dipartimento di Scienze Umane, Università di Verona

Mini-talk · Attention, perception and consciousness

In Italy, the valorization of public spaces is a debate topic driven by citizens' demand for regenerated spaces, and psychometric tools for measuring the perceived value of public goods from a psychological point of view seems not available. The present research aims to develop and validate a scale measuring the perceived value of citizens referred to public natural spaces, through a case study on the Poveglia Island (Venice). The instrument was developed through a multi-step approach. First, focus groups (N = 90) were conducted to identify the key dimensions of the perceived value and generate an initial item pool (dimensions emerged: historical-cultural, environmental,

psycho-social, economic-functional). An initial scale was generated, and the content validity was subsequently established through consultation with two experts. The refined instrument (37 items) was then administered in a pilot study (N = 223) to assess item quality and preliminary factor structure. Following further item refinement, the final scale (16 items) was administered to a larger sample (N = 657) for full psychometric validation. The resulting scale encompasses five dimensions: environmental value, historical-cultural value, functional value, social value, and psychological value. Confirmatory Factor Analysis was conducted showing excellent model fit indices, supporting the hypothesized factor structure (CFI= .97; SRMR= .03; RMSEA= .04). Criterion-related validity was established examining associations with related constructs and invariance was tested and confirmed across gender, residence e frequency of visit of the public good. The implications of these findings were used for the development of citizen-centered valorization strategies and public space governance.

100. Interoceptive contribution to time perception in a multisensory integration framework

Monia D'Angio¹, Alessia Tomao¹, Nicola Domenici², Alice Teghil³

¹ Department of Psychology, Sapienza University of Rome, Rome, Italy

² Angewandte Kognitionspsychologie, Universität Ulm, Ulm, Germany

³ Department of Psychology, Sapienza University of Rome, Rome, Italy
Cognitive and Motor Rehabilitation and Neuroimaging Unit, IRCCS Fondazione Santa Lucia, Rome, Italy

Mini-talk · Space, time and number

Time perception is shaped by bodily signals, yet how interoceptive and exteroceptive inputs interact to form temporal estimates remains unclear. The Bayesian cue combination framework explains how the brain weights multisensory information based on its reliability. However, its applicability to interoceptive signals remains unexplored. This study investigated whether interoceptive and exteroceptive signals are combined during time perception to optimize temporal precision. Participants (N = 45) performed a duration reproduction task involving visual and auditory suprasedond durations. Signal reliability was manipulated by embedding the stimulus within increasing levels of sensory noise. Heart-rate was continuously recorded using a BIOPAC MP160 device, and both interoceptive accuracy and sensibility were assessed using a Heartbeat Counting Task and the Self-Awareness Questionnaire. Results showed a significant interaction between stimulus modality and noise level, with increased central tendency in duration reproduction for high-noise stimuli, especially in the visual modality. The inclusion of the interaction between modality and noise level in the model was further confirmed by Bayesian analyses. Notably, a significant effect of interoceptive accuracy was found, indicating that higher interoceptive precision was associated with more precise time estimation. Conversely, no such association was found between duration reproduction performance and variations in vagal activity. Bayesian hierarchical modelling was further employed to expand on the role of interoceptive cues in shaping central tendency effects under varying noise levels. Overall, our results shed light on the potential interaction between dimensions of interoception and the reliability of exteroceptive information, providing initial insights into how these processes may be integrated during timing.

101. Cerebellar Stimulation and Implicit “Precognition” Effects in Retroactive Priming

Anita D'Anselmo¹, Benedetta Rollo², Chiara Lucafò², Giulia Fragale², Roberta Palanga², Marica Scalisi², Samuele Mascitelli², Luca Tommasi², Gianluca Malatesta²

¹ Department of Human Sciences, Link Campus University, Rome, Italy
² Department of Psychology, University “G. d'Annunzio” of Chieti-Pescara, Chieti, Italy

² Department of Psychology, University “G. d'Annunzio” of Chieti-Pescara, Chieti, Italy

Mini-talk · Emotions and motivation

Retroactive (target-first) variants of affective priming—where the target is presented before the prime—have been proposed as an implicit “precognition” proxy, in the minimal sense that information presented after an initial response may appear to bias that response. Although claims of precognition remain controversial, such paradigms provide a useful experimental framework for testing how temporal order may shape implicit affective evaluation. Given the cerebellum's role in timing and predictive processing, we examined whether cerebellar high-frequency transcranial random noise stimulation (cerebellar hf-tRNS) modulates affective priming as a function of temporal order. In a within-participant design ($N = 64$), participants completed two sessions (active cerebellar hf-tRNS and sham; order counterbalanced). In each session, they performed a valence categorization task using images from the Open Affective Standardized Image Set. Valenced adjective pairs generated congruent and incongruent trials. The paradigm included two matched blocks: retroactive (target-first) and forward (prime-first). Response times and accuracy were analyzed with mixed-effect models testing Congruency, Stimulation, and Timing, while accounting for individual-difference measures (personality, approach/avoidance motivation, and belief-related dispositions). Results showed that stimulation modulated the affective priming congruency effect and revealed interactions involving temporal order; stimulation-related changes varied as a function of timing and were differentially moderated by individual differences. This suggests that cerebellar hf-tRNS may be useful for probing timing-dependent mechanisms in affective evaluation, with retroactive and forward priming offering a sensitive framework for examining how stimulation effects interact with temporal order and individual differences. This study is part of a project funded by the BIAL Foundation.

102. Reparative Experience–Based Grief Therapy (REGT): Experimental evidence on efficacy and processes of therapeutic change

Fabio D'Antoni¹, Claudio Lalla²

¹ Psicologia Clinica e Dinamica

² Network for Reparative Experience-Based Grief Therapy (REGT), Roma, Italia

Mini-talk · Attention, perception and consciousness

Reparative Experience–Based Grief Therapy (REGT), which is rooted in and further develops Induced After-Death Communication (IADC) procedures, is an emerging brief intervention for complicated and prolonged grief. Initially grounded in clinical observation, recent research has evaluated its efficacy and processes of therapeutic change using standardized psychometric measures within an experimental psychology framework. This contribution synthesizes findings from multiple empirical studies employing observational and controlled pre–post designs in bereaved adult samples ($N \approx 60$ –113). Standardized instruments included measures of grief

and related constructs, such as the Inventory of Complicated Grief, as well as measures of emotional processing and attachment. Statistical analyses comprised paired-sample t -tests, repeated-measures ANOVA, and hierarchical regression models to estimate treatment effects and identify predictors of change. REGT consistently demonstrated substantial reductions in grief intensity (Cohen's $d = 0.95$) and superior efficacy over traditional grief therapy ($\eta^2 = .40$). Participants showed significant increases in adaptive continuing bonds ($d = -0.47$). Hierarchical regressions identified alexithymia and anxious attachment as significant negative predictors of clinical gains. Phenomenologically, 86% of Emergent Post-Loss Experiences (EPLes) exceeded established Near-Death Experience (NDE) thresholds, indicating an overall phenomenological overlap with the NDE profile. REGT provides rapid, large-scale treatment effects, supporting its classification as a high-impact brief intervention. Further randomized controlled studies are needed to refine current findings and clarify the processes of therapeutic change underlying the intervention.

103. Esplorazione degli effetti di transfer: uno studio sull'effetto Simon inverso

Stefania D'Ascenzo¹, Elena Gherri², Luisa Lugli², Roberto Nicoletti²

¹ Dipartimento di Psicologia e Scienze della Salute, Università Telematica Pegaso

² Dipartimento di Filosofia, Università di Bologna

Poster · Attention, perception and consciousness

Il presente studio esamina gli effetti di transfer (i.e., modulazione dell'effetto Simon in funzione di un compito precedente) nel Simon inverso, un fenomeno poco studiato, osservabile in una bassa percentuale di individui che mostrano risposte più rapide nelle condizioni non-corrispondenti rispetto a quelle corrispondenti. Ad un ampio campione è stato chiesto di svolgere un compito Simon (i.e., Baseline); all'interno di questo campione, sono stati selezionati i partecipanti che manifestavano l'effetto Simon inverso, successivamente hanno eseguito un compito di compatibilità spaziale con mapping stimolo-risposta compatibile o incompatibile (i.e., Inducer), seguito da un compito Simon (i.e., Diagnostic). I risultati mostrano che il compito Inducer modula l'effetto Simon inverso: il mapping incompatibile ne determina l'annullamento, mentre quello compatibile ne favorisce l'inversione, evidenziando un ruolo chiave dei processi di controllo/inibizione della via automatica.

104. Orienting of attention deficit in Multiple Sclerosis: Is it a matter of attentional control or motor programming?

Martina De Cesaris¹, Sofia Bonventre¹, Massimo Bertoli¹, Valentina Tomassini², Marcella Brunetti¹

¹ Institute for Advance Biomedical Technology (ITAB) and Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy

² Institute for Advance Biomedical Technology (ITAB) and Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy; MS Centre, SS. Annunziata University Hospital, Chieti, Italy; Centre for Disability, Rehabilitation and Sports Medicine (CARES), Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy

Mini-talk · Attention, perception and consciousness

Attentional orienting processes allow individuals to shift attention toward spatial locations, enhancing processing and

readiness for action to stimuli at attended positions. In Multiple Sclerosis (MS), a neuroinflammatory disease causing cognitive and motor impairment, discordant results from visuospatial attention tasks suggest either disrupted attentional orienting or reorienting deficits, together with general slower reactivity. The present study aims to clarify whether MS-related attentional alterations reflect impaired attentional control or motor programming difficulties. Healthy-volunteers (HV) and people-with-MS (pwMS) completed a modified Posner task in which a target arrow direction – pointing left or right and appearing on the upper or lower screen side – must be discriminated. A preceding cue arrow could appear in the same (Valid) or opposite (Invalid) position as the target, eliciting attentional orienting, or in both sides (Neutral). Moreover, it could point in the same (Congruent) or opposite (Incongruent) direction, eliciting motor programming, or it could be a non-oriented stimulus (No-Direction). This 3 (Side) x 3 (Direction) x 2 (Group) repeated-measure ANOVA design enables to orthogonally measure the contribution of these two processes to performance. Neuropsychological and clinical assessment has also been administered. Main preliminary results from 31 HV and 24 pwMS showed slower reaction times (RTs) in pwMS compared to HV. Also, differently from HV, in pwMS there is no significant difference in RTs between Valid and Invalid conditions, showing no benefit from valid cues. These results suggest that pwMS's performance deficits in visuo-spatial tasks are primarily due to attentional orienting alterations rather than motor programming.

105. When expectations are violated: the role of reward and schema-congruency on memory

Mariagrazia De Gioia¹, Vera Ferrari², Andrea De Cesare¹, Maurizio Codispoti¹

¹ Università di Bologna, Dipartimento di Psicologia

² Università di Parma, Dipartimento di Medicina e Chirurgia

Poster · Memory

Unexpected items are typically associated with enhanced memory. However, mnemonic advantages have also been observed for expected, schema-consistent items, and the conditions under which these effects emerge remain poorly understood. Moreover, unexpected events may carry important motivational consequences, signaling better or worse-than-anticipated outcomes. Here, we investigated recognition memory for pictures as a function of expectancy and reward. Participants (N=73) selected one of four colored-frames boxes, which probabilistically predicted whether the upcoming image would be associated with reward or not. In 25% of trials, these cue–outcome associations were violated, such that an unexpected picture category appeared with its associated reward outcome. Following encoding, participants completed a two-alternative forced-choice recognition memory task. Overall, memory accuracy did not reveal significant main effects of expectancy or reward, nor a significant interaction. However, individual differences analyses showed a positive correlation between overall memory performance and the magnitude of the difference between unexpected and expected item memory. Furthermore, when examining performance groups, extreme groups (high vs. low-accuracy) exhibited opposite patterns: low-accuracy participants showed better memory for expected than unexpected items, whereas high-accuracy participants showed the reverse pattern, consistent with a novelty effect. These findings suggest that different encoding mechanisms may underlie memory performance in this paradigm. Specifically, low-accuracy

individuals may rely more on expectancy-driven encoding, resulting in either reduced processing of unexpected items or facilitated encoding of expected information via expectancy-guided attention. In contrast, high-accuracy individuals may rely more on prediction error–driven encoding processes, leading to enhanced memory for unexpected events.

106. The Role of Inner Speech in Semantic Processing

Chiara De Livio¹, Fernando Maggio², Claudia Mazzuca², Luna Giordano², Johanne S. K. Nedergaard³, Charles Fernyhough⁴, Anna M. Borghi²

¹ Sapienza Università di Roma, Dipartimento di Psicologia

² Sapienza Università di Roma

³ Københavns Universitet

⁴ Durham University

Poster · Language, reading and music

Inner speech—namely, the experience of engaging in conversations with oneself—is a form of internal verbal representation that preserves the fundamental dynamics of social exchange. However, despite its intrinsically social origin (Vygotsky, 1934/1987), it has so far been studied exclusively in individual contexts. Inner speech is recognised for its key role in various functions of mental life (Alderson-Day & Fernyhough, 2015); however, its contribution to semantic memory remains underexplored, although recent proposals suggest a role in monitoring semantic knowledge (Fernyhough & Borghi, 2023). This preregistered study (<https://tinyurl.com/yjd7uyrv>) investigates the use of inner speech, alongside other forms of mental representation (visual, orthographic), during social interactions focused on concepts that vary in degree of abstractness and vagueness (Borghi, Mazzuca, Tummolini, 2025). Thirty native Italian-speaking participants (mean age = 26.5 years) took part in the pilot study, completing, in pairs, an interactive task involving the definition of concepts varying in abstractness and vagueness. To examine the use of inner speech, participants were asked to respond to random probes about their internal experience, adapted from validated questionnaires (Roebuck & Lupyan, 2023; Alderson-Day et al., 2025). Preliminary results indicate that inner speech is more frequently used during social interactions involving abstract concepts, whereas visual representations are more active during discussions of concrete concepts. Overall, the preliminary findings indicate that inner speech sustains semantic processing during social interaction, particularly for more abstract concepts, possibly reflecting processes of internal semantic monitoring.

107. Description of emotional states in written Italian: A corpus-based study

Maria De Martino¹, Alessandro Maisto¹, Stefania Borgo²

¹ University of Salerno, PoliCom

² CRP, Centro per la Ricerca in Psicoterapia, Roma

Poster · Language, reading and music

Emotional experiences are multidimensional and context-dependent. They involve subjective feelings, thoughts, desires, bodily sensations, actions, as well as social and environmental contexts, past and anticipated events, all of which contribute to processes of meaning-making. Accordingly, emotional meaning is not explicitly encoded in single linguistic forms, but emerges from the interaction of lexical, syntactic, and semantic information. In this perspective, emotion-annotated corpora provide the empirical basis for operationalizing the

complex mappings between linguistic cues and inferred emotional states and enable the development and evaluation of computational models for emotion detection. However, such resources for Italian remain limited in both size and coverage compared to other languages. Existing resources are predominantly based on social media data and typically rely on simplified annotation schemes that fail to capture the multidimensional nature of emotional experience. We introduce a novel corpus based on 736 written reports of emotionally salient episodes written by 124 trainees in cognitive-behavioral psychotherapy. The reports were elicited using a structured self-observation instrument designed to capture behavioral, somatic, cognitive, and imagery components within a temporally organized framework (antecedent event, emotional experience, and post-episode resolution). Eight emotions were considered: anxiety/fear, pain/suffering, joy, interest, pleasure, anger, disgust/rejection, and sadness. The resulting corpus has been annotated through a dual process involving both human annotators and state-of-the-art NLP models. The observed misalignment between human and automatic annotations, despite NLP models' ability to capture salient linguistic markers of emotion, provides a critical basis for identifying and examining biases and limitations in computational approaches to emotion detection in written text.

108. Concepts as Embodied Schematic Structures Varying in Representational Entropy

Glenn De Muynck¹, Anna Sofia Lippolis², Aldo Gangemi², Luisa Lugli²

¹ UNIBO, Department of Philosophy

² UNIBO, Department of Philosophy

Poster · Language, reading and music

In the present study, we propose an operationalization of concepts as schematic structures that activate multivariate profiles of embodied situational dimensions, including agents, objects, actions, physical settings, emotions, functions, and feature-like elements. Specifically, we examine the extent to which concepts provide access to stable event models (contexts), by assessing representational stability across participants within each dimension, a property we refer to as representational entropy. To obtain this operationalization, we administered a structured variant of the free-listing task to 430 participants for 180 Italian nouns spanning diverse semantic domains and covering the full concreteness continuum. Participants generated as many relevant associations as possible for each representational dimension (persons, objects, actions, etc.). From these responses, we derived five measures intended to serve as proxies for representational entropy within each dimension: response set size, response time to the first association, semantic intra-dispersion (cosine distance among responses), semantic inter-dispersion (cosine distance between targets and responses), and lexical overlap across participants. We investigated the validity of this approach by examining whether concrete and abstract concepts differed meaningfully across metrics and representational dimensions. Furthermore, a data-driven cluster analysis based on all 35 measures yielded two clusters closely aligned with the concrete–abstract distinction. Overall, these results suggest that representational entropy captures both the grounding of concepts in embodied and situational dimensions and the context-dependent flexibility with which these dimensions are activated, providing a more fine-grained account of concreteness as the extent to which a concept is anchored to a stable event model.

109. The effect of compassion and mindfulness meditation in shaping self-other interactions

riccardo de pastina¹, Salvatore Gaetano Chiarella¹, Luca Simone¹

¹ Università degli Studi Internazionali UNINT Roma

Intervento in simposio · Action and movement

Both mindfulness meditation and compassion meditation (CM) increase prosocialness. Increased prosocialness, in addition to the bodily changes associated with meditative expertise, suggests that these practices reshape the self-other representation: while mindfulness reduces self-centeredness, compassion promotes self-other connectedness. Self-other representation is reflected in the features of peripersonal space (PPS), the plastic representation of the multisensory area surrounding the body: literature shows that social interactions alter PPS size, depending on the quality of the interaction itself. We hypothesized that meditation focused on compassion, interdependency and interconnectedness with others could affect PPS, even in the absence of real-life interactions. To this aim in a pre-post design we assessed the effects of a brief CM on PPS parameters, both in non-meditators and expert meditators. Moreover, we examined the preferred interpersonal distance of participants interacting with a stranger. Up to now data have been collected from 20 non-meditators and 9 experienced meditators. Before and after a 15-min guided CM, participants performed the audio-tactile task to investigate PPS parameters and the stop-distance task to assess their preferred interpersonal distances. Preliminary analysis revealed that CM did not alter PPS of non-meditators, whereas interpersonal distances decreased significantly. This finding suggests that CM promoted changes at the behavioral level, reflected in shorter social distances, but not at a more implicit level. The ongoing data collection with expert meditators will clarify whether meditative expertise plays a role and is associated with more marked changes in PPS features, and whether it impacts the results significantly.

110. Explaining the Failure to Detect Large Omissions to Familiar Environmental Scenes: Cue Strength Matters

Fabio Del Missier¹, Irene Florean¹, Marta Stragà¹

¹ University of Trieste

Mini-talk · Memory

Previous studies have reported a striking inability of individuals to notice significant omissions in photographs of scenes of familiar built environments. These findings suggest that people have a limited ability to remember elements of scenes they encounter repeatedly in daily life. However, the results allow for different interpretations of the role of the cognitive processes underlying detection failures, with some explanations focusing on encoding processes and others emphasizing the contribution of retrieval processes or mental comparison with long-term memory representations. Additionally, previous studies have used stimuli that are not typical of familiar visual scenes in a city. In two experiments we replicated the poor detection performance using stimuli representing familiar city locations and local participants. In a third experiment, we showed that retrieval processes play a significant role in detection failures, with only very strong retrieval cues allowing individuals to overcome these failures. Our results suggest that the most likely explanation for the difficulty in detecting large omissions in environmental scenes of familiar built places lies in the interaction between shallow encoding and difficult retrieval.

They also suggest that it may be wise to provide individuals with external support when a precise representation of the environment is critical, and it is important to address overconfidence in memory for places.

111. Interpreting Bodily Signals Under Stress: Interoceptive Accuracy, Daily Sensibility, and Stress Reactivity

Fiorella Del Popolo Cristaldi¹, Antonio Maffei², Gioia Bottesi¹, Nicola Cellini³, Giovanni Mento⁴, Leah Banellis⁵, Micah G. Allen⁵

¹ Università di Padova, Dipartimento di Psicologia Generale

² Università di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione, Padua Neuroscience Center

³ Università di Padova, Dipartimento di Psicologia Generale, Padua Neuroscience Center

⁴ Università di Padova, Dipartimento di Psicologia Generale, IRCCS Eugenio Medea Conegliano

⁵ Università di Aarhus, Center of Functionally Integrative Neuroscience, Department of Clinical Medicine

Mini-talk · Emotions and motivation

Perception and representation of bodily signals are central to the experience of the self and to stress regulation. However, evidence linking interoception to psychosocial stress reactivity remains mixed, particularly with respect to interoceptive accuracy. In our recent work, we argue that these inconsistencies reflect a conceptual limitation: interoception is better understood as a dynamic, context-dependent process in which bodily signals are interpreted rather than passively detected. Accordingly, stress-related outcomes depend not on accuracy alone, but on how bodily changes are appraised in context. We examined how interoceptive accuracy and daily interoceptive sensibility relate to physiological and affective responses to acute stress within a single ecological design. Adult participants (N = 46) completed three laboratory sessions across consecutive days, including ECG recordings. Interoceptive accuracy was assessed using a heartbeat counting task, and stress was induced using the Trier Social Stress Test. Daily interoceptive sensibility and affect were measured via smartphone-based experience sampling from the day before to the day after the stressor. Factor analysis of ecological reports identified two components capturing gut/energy-related and cardiorespiratory sensations. Trait anxiety and stress levels modulated the coupling between bodily sensations and affective arousal. Higher interoceptive accuracy and daily sensibility were also associated with reduced heart rate during stress. Together, these findings indicate that interoception supports stress regulation through individual patterns of bodily appraisal rather than enhanced signal detection per se. This study provides support for an interpretive model of interoception and highlights interoceptive self-appraisal as a clinically relevant target for understanding stress vulnerability.

112. Beyond sensorimotor recalibration: cognitive effects of rightward visuomotor adaptation in prism and digital paradigms

Chiara Destro Pastizzaro¹, Emanuele Rosario Bonaventura², Gabriele Chiaramonte, Patrizia Turriziani³, Massimiliano Oliveri⁴

¹ School of Advanced Study, University of Camerino

² Department of Biomedicine, Neuroscience and Advanced Diagnostics (BIND), University of Palermo

³ Department of Psychology, Educational Science and Human Movement (SPPEFF), University of Palermo

⁴ Center for Neurology & Rehabilitation (CERENEO)

Poster · Methodology

Visuomotor adaptation paradigms, such as prism adaptation (PA), are known to influence not only sensorimotor processing but also higher-order cognitive functions. Traditionally employed to modulate egocentric spatial representations, accumulating evidence indicates that PA can also affect executive functions, including cognitive control and working memory. Within this framework, digital visuomotor adaptation (D-VMA) based on visuomotor rotation represents a potentially scalable alternative; yet its effects on cognitive functioning remain largely unexplored. The present study investigated the effects of PA and D-VMA on cognitive functioning, hypothesizing partially overlapping effects across paradigms, both relative to a non-adapted control condition. Fifty-seven healthy participants were assigned to PA, D-VMA, or control groups. Cognitive performance was assessed at baseline (T0) and post-adaptation (T1) using the Digit Span and Corsi Block tasks (forward and backward), the Stroop Color–Word task, and phonemic verbal fluency (FAS). PA involved a pointing task with a 20° rightward prism deviation, whereas D-VMA consisted of a gamified tablet task with progressively increasing rightward visuomotor rotations. Data were analyzed using mixed-design ANOVAs. Both PA and D-VMA improved Digit Span forward scores relative to baseline, with D-VMA also outperforming the control group at T1. Corsi Block Span was selectively enhanced by D-VMA, which outperformed both PA and control at T1. Stroop interference time differed significantly across groups at T1, with PA showing the greatest reduction. These findings indicate that rightward PA and D-VMA differentially modulate working memory and cognitive control, with overlapping but paradigm-specific patterns, supporting their complementary use in cognitive research and clinical neurorehabilitation applications.

113. The importance of beta oscillations for reading abilities in Developmental Dyslexia: evidence from a tACS-based intervention and machine learning

Giuseppe Di Dona¹, Denisa Adina Zamfira², Francesco De Benedetto³, Chiara Turri⁴, Camilla Venturini⁵, Lisa Venniro⁶, Daniela Perani⁷, Luca Ronconi⁸

¹ Dipartimento di Psicologia e Scienze Cognitive, Università degli Studi di Trento

² Divisione di Neuroscienze, IRCCS Ospedale San Raffaele, Milano

Facoltà di Psicologia, Università Vita-Salute San Raffaele, Milano

Dipartimento di Neuroscienze, Università degli Studi di Torino

³ Divisione di Neuroscienze, IRCCS Ospedale San Raffaele, Milano

Facoltà di Psicologia, Università Vita-Salute San Raffaele, Milano

Dipartimento di Psicologia, Università degli Studi di Milano-Bicocca

⁴ Divisione di Neuroscienze, IRCCS Ospedale San Raffaele, Milano

Faculty of Psychology and Neuroscience, Maastricht University

⁵ Divisione di Neuroscienze, IRCCS Ospedale San Raffaele, Milano

Facoltà di Psicologia, Università Vita-Salute San Raffaele, Milano

Dipartimento di Psicologia, Università degli Studi di Torino

⁶ Facoltà di Psicologia, Università Vita-Salute San Raffaele, Milano

⁷ Divisione di Neuroscienze, IRCCS Ospedale San Raffaele, Milano

Facoltà di Psicologia, Università Vita-Salute San Raffaele, Milano

⁸ Dipartimento di Psicologia e Scienze Cognitive, Università degli Studi di Trento

Divisione di Neuroscienze, IRCCS Ospedale San Raffaele, Milano

Facoltà di Psicologia, Università Vita-Salute San Raffaele, Milano

Mini-talk · Attention, perception and consciousness

Developmental Dyslexia (DD) is characterized by impaired reading efficiency resulting from suboptimal letters/words segregation and saccadic control. These deficits are likely to depend on dysfunctions of the magnocellular dorsal (M-D) stream. Mounting evidence linked specific functions of the M-D stream to the beta-band (15-25 Hz) activity in the parietal cortex. In the present study, we combined reading acceleration training with high-definition transcranial alternating current stimulation (tACS) to increase reading speed in adults with DD. Participants took part in a 12-session training protocol and were allocated to 3 different training groups. The Vis-tACS and Vis-Sham groups performed a reading acceleration training while the Phon-Sham group performed a phonological training. During the training tasks, the Vis-tACS group received beta (18 Hz) tACS over bilateral parietal sensors, while Vis-Sham and Phon-Sham groups received a placebo stimulation. Results showed that all groups equally improved their reading skills at neuropsychological tests. However, beta-tACS induced larger improvements in covert reading speed, and exclusive improvements in oculomotor control, and working memory. These outcomes were accompanied by plastic changes in the stimulated brain networks as suggested by modulations of beta-band activity. Machine-learning analyses performed on RS-EEG acquired before the training showed that beta power and frequency were the clearest predictors of training outcomes irrespectively of training type. These results highlight the central role of parietal beta oscillations for visual attention, oculomotor control and working memory in DD. Beta oscillations acquire further relevance in predicting training outcomes, possibly fostering the development of EEG-informed training protocols for DD.

114. Predictors of parental burnout in mothers: a study from the NINFEA birth cohort

Francesca Di Franco¹, Veronica Della Casa², Milena Maule³, Costanza Pizzi³, Lorenzo Richiardi³, Carla Tinti⁴, Rosalba Rosato⁴, Federica Andrei², Maja Popovic³

¹ Dipartimento di Psicologia, Università di Torino

² Department of Psychology, University of Bologna

³ Department of Medical Sciences, University of Turin

⁴ Department of Psychology, University of Turin

Mini-talk · Life cycle (e.g., development and aging)

Parental burnout (PB) is a clinical syndrome involving chronic emotional exhaustion and distancing within the parenting role. While its impact is significant, evidence identifying early-life predictors from the "first 1,000 days" as long-term drivers of PB remains scarce. This study investigates the associations between maternal socioeconomic status, health conditions, and early caregiving factors with PB symptoms 10–16 years after delivery. Data were analyzed from 2,067 mothers in the NINFEA birth cohort. PB was assessed 10-16 years post-delivery using the 23-item Parental Burnout Assessment (PBA). Exposures collected during pregnancy and the first 2 years of the child's life included sociodemographic characteristics (maternal age, education and employment, and family income and composition), maternal health, and caregiving factors (daycare, breastfeeding, TV exposure, mother-child interaction, sleep, feeding, crying). Clinical PB and at-risk prevalence were 1.1% and 3.3%, respectively. Higher PB scores were associated with pre-pregnancy unemployment (Ratio of Means (ROM): 1.26; 95% CI: 1.05-1.52) and lower equivalized household income (1.37; 1.01-1.86). Maternal health psychiatric disorders before (1.42; 1.17-1.71) or during pregnancy, and pre-existing physical illnesses, were associated with increased PB scores. Child-related factors associated with maternal BP included frequent crying (sometimes: 1.28, 1.10-1.50; frequently: 1.35, 1.13-1.62), feeding refusal, and soothing challenges (1.26; 1.09-1.46). Conversely, early mother-child interactions showed a protective effect (0.97; 0.95-1.00). Long-term maternal PB is rooted in early socioeconomic vulnerabilities, health conditions, and caregiving challenges. Early identification of at-risk populations is crucial to guide parenting support policies and mitigate chronic parental strain.

115. Development of haptic cross-section recognition in school-aged children

Margherita Di Gaudio¹, Silvia Zanchi², Matilda Pia Capurro³, Monica Gori⁴

¹ Università di Genova, Istituto Italiano di Tecnologia

² Istituto Italiano di Tecnologia

³ Università degli Studi di Parma

⁴ Istituto Italiano di Tecnologia, Institute for Human and Machine Cognition

Poster · Space, time and number

Cross-sectioning requires inferring the two-dimensional shape produced by slicing a three-dimensional solid. This ability relies on spatial representation, mental manipulation of 3D and 2D forms, and extraction of geometric structure, skills that develop during childhood. We investigated whether haptic recognition of solids' cross-sections improves across development and whether shape complexity and cut type affect performance. Using a haptic version of the Santa Barbara Solids Test, we also examined whether children's performance depends mainly on local haptic cues or on more abstract mental representations. Thirty-seven typically developing children aged 6–11 years ($M = 8.22$, $SD = 1.29$) haptically explored

3D-printed solids and selected the corresponding cross-section among four 3D-printed response options. Children in the first two years of primary school completed 12 trials, whereas children in the following two years completed 14 trials. Accuracy was analyzed with a binomial generalized linear mixed-effects model including age, shape, and cut as predictors, with subject as a random intercept. Age, $\chi^2(1) = 7.55$, $p = .006$, and cut, $\chi^2(1) = 16.68$, $p < .001$, significantly predicted performance: accuracy increased with age and was lower for diagonal than orthogonal cuts. The significant Age $\times$ Cut interaction, $\chi^2(1) = 7.97$, $p = .005$, showed that age-related improvement differed by cut type, being more pronounced for orthogonal cuts. Shape was not significant, $\chi^2(2) = 3.84$, $p = .147$. Overall, haptic cross-section recognition improves with age, while diagonal cuts impose greater processing demands. Developmental changes may reflect increasing abstraction and spatial transformation abilities. Future work will examine systematic error patterns and extend the paradigm to children with severe visual impairment.

116. Rewarding, threatening, and uncanny too: Attentional and motivational responses to approaching characters

Teresa Di Lauro¹, Serena Mastria¹, Maurizio Codispoti¹, Andrea De Cesare¹

¹ Università di Bologna, Dipartimento di Psicologia

Poster · Emotions and motivation

Emotional responses are modulated by both the emotionality and proximity of events, and previous studies observed that motivational engagement, action preparation and attentional response are staged depending on these factors. Here, we investigated how pictures of approaching characters, which are associated with reward or loss, modulate physiological and behavioral responses. Moreover, as humanoid robots might be perceived as threatening ("uncanny valley hypothesis"), approaching characters could be humans, mechanical, or humanoid robots, and we assessed whether humanoid robots were specifically associated with defensive engagement. Sixty-three participants viewed natural scenes, some of which represented characters progressively increasing in size to simulate approach, and required a response when maximally proximal. In a counterbalanced design, each character category could be associated with gain, loss, or timing feedback. Peripheral, central, and behavioral activities were measured. Heart rate, startle blink magnitude, and probe P3 amplitude indicated progressive attentional engagement as characters approached, with no modulation by reward or loss. In contrast, motivational modulation increased with proximity for skin conductance, suggesting progressive action preparation, and emerged for the Late Positive Potential at the final stage of approach. Concerning humanoid robots, the patterns of skin conductance change and heart rate modulation were particularly enhanced when these characters were associated with threat of losing points. Overall, approaching stimuli elicited a dynamic processing sequence characterized by early vigilance followed by action preparation, consistent with a cascade model of defensive motivation. Additionally, our findings seem to support the uncanny nature of humanoid robots, which preferentially enhanced peripheral responses in threatening situations.

117. Enhancing social presence in virtual collaborative learning: The role of preliminary face-to-face online interaction

Anna Flavia Di Natale¹, Luana Amadini Genovese², Andrea Ubaldi¹, Giuseppe Riva², Andrea Gaggioli¹, Daniela Villani¹

¹ Research Centre in Communication Psychology, Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy

² Humane Technology Lab, Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy

Mini-talk · Social cognition

Social virtual reality (VR) platforms are increasingly used for collaborative learning. However, interaction through avatars may reduce perceived social presence, thereby undermining the overall collaboration experience. Recent research suggests that prior direct acquaintance between participants (i.e., using their real identities) can enhance social presence and foster greater group cohesion and more effective collaboration in virtual environments. This study explores whether a preliminary face-to-face online meeting enhances social presence in social VR environments. A between-subjects experimental design compared two conditions: (1) direct collaboration in a social VR platform (Spatial) and (2) collaboration in a social VR platform (control) preceded by an ice-breaking session on Microsoft Teams (experimental). Participants were university students ($M_{age} = 24.95 \pm 2.28$) working in dyads on a think-pair-share task, in which they learned, shared, and jointly presented information. Self-report measures assessed social presence across four dimensions: co-presence, mutual attention, emotional contagion, and mutual comprehension. Data collection is ongoing; current analyses include 11 dyads ($n = 22$). Independent samples Welch's t-tests were conducted. Preliminary findings indicate significantly higher co-presence and mutual comprehension in the experimental condition compared to Spatial only. No differences emerged for mutual attention or emotional contagion. Preliminary findings suggest that a brief preliminary face-to-face interaction may enhance specific dimensions of social presence in VR-based collaboration. These results indicate that prior direct interaction can foster interpersonal connection in avatar-mediated environments, supporting more effective collaboration. Further data collection will clarify the robustness of these effects.

118. Cortical and Behavioral Correlates of Moral Decision-Making: A multimodal approach

Ilaria Di Pompeo¹, Maria Concetta Pellicciari², Simone Migliore³, Marco Costanzi², Giuseppe Curcio³

¹ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche Applicate e Biotecnologiche / Libera Università Maria Santissima Assunta, Dipartimento di Scienze Umane

² Libera Università Maria Santissima Assunta, Dipartimento di Scienze Umane

³ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche Applicate e Biotecnologiche

Mini-talk · Social cognition

Moral decision-making reflects the interaction between affective processes and cognitive control mechanisms, respectively linked to the ventromedial and dorsolateral prefrontal systems. Despite growing interest, the cortical oscillatory mechanisms underlying moral decision-making and their modulation by trait empathy remain largely unexplored. Twenty healthy adults performed a Moral Decision-Making Task comprising neutral (NM), impersonal (IM), and personal (PM) dilemmas during a 64-channel EEG recording. Trait empathy was measured via the Empathy Quotient (EQ). Event-related spectral

perturbations (ERSP) were derived via Morlet wavelet decomposition across delta, theta, alpha, and beta frequency bands, with a focus on frontal, central, and parietal regions of interest. Utilitarian response rates were used as the primary behavioral measure. Time–frequency analyses revealed significant fronto-parietal alpha suppression and decreased parietal beta power in PM compared to IM dilemmas, indicating increased engagement of cognitive control and enhanced attentional processing in personally relevant moral contexts. No significant modulation of delta or theta activity was observed across dilemma types. Behaviorally, utilitarian responses were more frequent in IM than in both PM and NM dilemmas. Interestingly, EQ scores were negatively correlated with utilitarian choices only in IM dilemmas, suggesting that higher empathy reduces utilitarian responses in less emotionally engaging contexts. Alpha–beta oscillatory dynamics appear to reflect the interaction between emotional salience and cognitive control during moral judgment. Empathy influences behavior only in impersonal dilemmas, highlighting individual differences in moral cognition. Overall, this multimodal approach enhances current neurocognitive models of morality and offers a promising avenue for linking electrophysiological signals to personality traits.

119. Conseguenze comportamentali e neurobiologiche della delezione di *Dcdc2* durante lo sviluppo e nell'età adulta: un modello murino genetico di dislessia evolutiva

Matteo Di Segni¹, Donald Ielpo², Efe Soyman³, Mauri Chiara¹, Tommaso Ciceri¹, Pizzetti Silvia⁴, Denis Peruzzo¹, Valentina Lampis¹, Sara Bertonis⁵, Rossella Ventura^{2,8}, Andrea Facoetti⁵, Sara Mascheretti^{1,5*}, Lucy Babicola^{2,3*}

¹ IRCCS Eugenio Medea, Child Psychopathology Unit

² University of California-Davis, Department of Psychology and Center for Mind and Brain

³ Koç University_Psychology

⁴ Sapienza University of Rome_Psychology

⁵ University of Bergamo_Department of Human and Social Sciences

Mini-talk · Language, reading and music

La dislessia evolutiva (DE) è un disturbo del neurosviluppo caratterizzato da difficoltà nell'acquisizione della lettura ed è associata ad alterazioni del funzionamento della via magnocellulare-dorsale (MD), coinvolta nei processi di controllo attentivo e nelle abilità di lettura. La comprensione di come i fattori genetici influenzino i substrati neuronali e, di conseguenza, specifiche abilità cognitive durante lo sviluppo può avvalersi dell'uso di modelli animali, che consentono la modulazione genetica in condizioni ambientali controllate, permettendo al contempo la valutazione dei correlati molecolari, funzionali e comportamentali. Nel presente studio, abbiamo utilizzato un modello murino preclinico caratterizzato dalla delezione parziale costitutiva (knockout eterozigote) del gene *DCDC2* (*Dcdc2*^{+/-}), un gene candidato per la DE, associato alla variabilità interindividuale nelle prestazioni di lettura e nella percezione del movimento, nonché ad alterazioni neurobiologiche strutturali e funzionali alla base del controllo attentivo e delle abilità di lettura nell'uomo. I risultati indicano che i topi *Dcdc2*^{+/-} mostrano un ritardo selettivo nell'acquisizione di funzioni motorie, somatosensoriali, uditive e attentive durante lo sviluppo, con effetti a lungo termine sulle abilità cognitive in età adulta. Inoltre, tali alterazioni fenotipiche

sono supportate da una modificata attivazione in aree cerebrali coinvolte nella percezione del movimento e appartenenti alla via MD. I risultati attuali possono fornire spunti rilevanti sui meccanismi genetici e neurofunzionali che contribuiscono alla vulnerabilità alla DE all'interno di una cornice multifattoriale dello sviluppo.

120. Cold and Hot Executive Functions in Tourette Syndrome across Developmental Age: Evidence from Working Memory, Inhibition, Decision Making, and Risk Taking

Cristina Di Vincenzo¹, Alice Cancer², Maria Pontillo³, Federica Pugliese⁴, Md. Tanbeer Haque⁵, Stefano Vicari⁶, Alessandro Antonietti⁴, Deny Menghini⁷

¹ Università Cattolica del Sacro Cuore

² Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy

³ Child and Adolescent Neuropsychiatry Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy

⁴ Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy

⁵ Department of Physiology and Pharmacology, Sapienza University, Rome, Italy; Behavioral Neuroscience PhD Program, Sapienza University, Rome, Italy

⁶ Child and Adolescent Neuropsychiatry Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy; Department of Life Sciences and Public Health, Università Cattolica del Sacro Cuore, Rome, Italy

⁷ Child and Adolescent Neuropsychiatry Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy

Poster · Attention, perception and consciousness

Tourette Syndrome (TS) is a neurodevelopmental disorder characterized by chronic motor and vocal tics, frequently associated with cognitive and behavioral difficulties. Although the literature suggests a vulnerability of executive functions (EF) in this population, impairment profiles in developmental age remain heterogeneous and not fully characterized. The present study investigated cold EF (working memory and inhibition) and hot EF (decision making and risk propensity) in children and adolescents with TS. The sample included 14 patients diagnosed with TS (aged 6-18 years) and 11 healthy controls – matched for age, sex, and intelligence quotient – assessed through the N-Back task, Stop Signal Task (SST), Iowa Gambling Task (IGT), and Balloon Analogue Risk Task (BART). Regarding cold EF, participants with TS showed significantly worse performance compared to controls in visuospatial working memory (Welch's $t = 2.18$, $p = .040$) and lower accuracy on Go trials of the SST (Welch's $t = 2.66$, $p = .018$; $U = 27.0$, $p = .006$). No differences were observed in measures of inhibitory control (SSRT, PRes, SSD). Hot EF, assessed through IGT and BART, showed no significant differences between groups ($p > .10$). Overall, the results highlighted differences limited to visuospatial working memory and Go trial accuracy – namely, in trials where inhibition is not required – with poorer performance in the TS group. No evidence of impairment emerged in inhibitory control or risk-based decision making. This pattern suggests circumscribed alterations in specific aspects of cognitive executive functioning (cold), in the absence of difficulties in risk-based decision making (hot), consistent with the heterogeneity of neuropsychological profiles described in the TS literature.

121. Screening del deterioramento cognitivo lieve: uno studio esplorativo con approccio Decision Tree

Giorgia D'Ignazio¹, Noelia Rico², Leonardo Carlucci³, Maria Rita Sergi⁴, Laura Dattilo³, Michela Terrei⁵, Lucia Del Signore⁵, Michela Balsamo⁵

¹ Università "G.d'Annunzio", Chieti-Pescara

² Dipartimento di informatica, Università di Oviedo

³ Dipartimento di Studi Umanistici, Lettere, Beni Culturali, Scienze della Formazione, Università di Foggia

⁴ Dipartimento di Psicologia e Scienze della Salute, Università Pegaso, Napoli

⁵ Dipartimento di Psicologia, Università "G.d'Annunzio", Chieti-Pescara

Mini-talk · Methodology

Ridurre la quantità di item necessari per individuare con precisione il deterioramento cognitivo rappresenta un obiettivo di grande rilevanza clinica. Il presente studio esplorativo mirava a identificare il numero minimo di misure neuropsicologiche in grado di classificare accuratamente i partecipanti come anziani cognitivamente sani o affetti da decadimento cognitivo lieve (MCI). Per la classificazione dei partecipanti è stato adottato il Montreal Cognitive Assessment (MoCA), utilizzando un cut-off di ≤ 26 per definire il gruppo clinico ($N = 202$) e > 26 per il gruppo non clinico ($N = 63$; Nasreddine et al., 2005). Per approfondire le determinanti cognitive sottostanti, è stato implementato un modello di apprendimento automatico (Decision Tree), volto ad analizzare l'intera batteria di test somministrata. Per la selezione delle variabili erano disponibili complessivamente 480 item di tipo demografico, psicologico e neuropsicologico, relativi a diversi domini cognitivi e psicologici (memoria, attenzione, funzioni esecutive, linguaggio, abilità visuospatiali, riserva cognitiva, metacognizione, worry, depressione, ansia e stress). I modelli sono stati addestrati e validati suddividendo il campione in training-set e test-set, con valori di balanced accuracy compresi nell'intervallo 0,52-0,85. Questo approccio ha consentito di identificare gli item maggiormente informativi per la discriminazione tra individui cognitivamente sani e individui con MCI, riducendo il dataset a un insieme essenziale di 37 variabili. I risultati di questo studio esplorativo suggeriscono che le tecniche di machine learning possono classificare accuratamente individui con MCI, riducendo il numero di misure necessarie per la diagnosi; tuttavia, ulteriori studi di validazione sono necessari per confermare l'affidabilità della batteria di item selezionata.

122. Enhancing Memory and Attention Through Adaptive Computerized Cognitive Training in Healthy Older Adults: Near and Far Transfer Effects

Dario Dignorello¹, Sara Zuppiroli², Maria Giovanna Mulas¹, Giovanna Mioni¹, Michele Vicovaro¹, Mauro Gaspari³, Franca Stabulum¹

¹ University of Padova, Department of General Psychology

² CNR Bologna, Institute of Cognitive Sciences and Technologies

³ University of Bologna, Department of Computer Science and Engineering

Poster · Attention, perception and consciousness

Cognitive decline associated with ageing is a growing public health concern. Computerised Cognitive Training (CCT) has emerged as a promising non-pharmacological intervention, although the extent to which its effects are specific to different cognitive domains is not well understood. This study investigated the differential effects of attention- and memory-focused CCT programmes, examining their specificity and potential near- and far-transfer effects in healthy older

adults. Eighty-four healthy older adults (aged 61–86) were randomly assigned to one of three groups: Attention Computerised Cognitive Training (ATT-CCT), Memory Computerised Cognitive Training (ME-CCT) or a Passive Control Group (CG). Participants in the experimental groups underwent eight laboratory-based sessions (each lasting ~45 minutes) of the respective training activity. A cognitive test battery was administered before, after, and three months following the intervention. The results showed that ATT-CCT improved performance specifically in attention and processing speed, as assessed using the Forward Digit Span ($p = .049$) and the Symbol Digit Modalities Test ($p = .002$). ME-CCT specifically improved working memory and perceived cognitive difficulties, as assessed by the Backward Digit Span ($p = .030$) and Cognitive Failure Questionnaire ($p = .007$). Notably, both ATT-CCT and ME-CCT demonstrated significant enhancements in verbal memory and spatial working memory, as evaluated using the Verbal Selective Reminding Test ($p = .009$) and the Imaginative Puzzle ($p = .050$). These findings suggest that both ATT-CCT and ME-CCT are promising, domain-specific interventions for enhancing cognition in healthy ageing, providing stable benefits at the three-month follow-up.

123. Interoception across cardiac and respiratory modalities: individual differences and associations with spatial anxiety

Erica Dolce¹, Silvia Canino², Irene Ruffo³, Francesca Grillo², Simona Raimo², Liana Palermo²

¹ Department of Clinical and Experimental Medicine, University of Messina, Messina, Italy

² Department of Medical and Surgical Sciences, "Magna Graecia" University of Catanzaro, Catanzaro, Italy

³ Department of Health Sciences, "Magna Graecia" University of Catanzaro, Catanzaro, Italy

Poster · Attention, perception and consciousness

Although theoretical models and empirical evidence conceptualise interoception as a multimodal and multidimensional construct, research has primarily focused on cardiac signals, leaving other interoceptive modalities relatively underexplored (Garfinkel et al., 2016). Given limited evidence comparing organ-specific interoceptive axes and mixed results, the present study investigated the relationship between cardiac and respiratory interoception. It further tested whether individual differences in interoceptive accuracy (IAcc) for each modality were associated with spatial anxiety, defined as the tendency to experience anxiety in situations requiring spatial processing. One hundred and six healthy participants (mean age = 19.5, SD = 1.35) completed behavioural tasks assessing cardiac and respiratory IAcc (Heartbeat Counting Task and Breath Detection Task), along with self-report measures of interoceptive sensibility (SAQ, Self-Awareness Questionnaire) and spatial anxiety. Correlation analyses revealed a weak but significant association between cardiac and respiratory IAcc, indicating that greater heartbeat perception accuracy was linked to better performance in the Breath Detection Task. Respiratory IAcc was negatively correlated with the SAQ-visceral domain, but not with the SAQ-somatosensory domain. However, cardiac IAcc showed no significant association with SAQ scores. Finally, an exploratory extreme-groups compared participants with high vs. low IAcc (cardiac and respiratory) to assess differences in spatial anxiety. A significant effect emerged only for the respiratory modality, with higher respiratory IAcc associated with lower spatial anxiety. Overall, these findings support a multimodal

account of interoception and highlight modality-specific differences. In particular, they suggest that respiratory, rather than cardiac, interoception may be specifically involved in the emotional experience related to spatial orientation.

124. The Shepard Swing: Evaluating Endogenous Bistability Beyond Vision

Nicola Domenici¹, Timo Oess¹, Katharina Wüning¹, Marc Ernst¹

¹ Universität Ulm

Mini-talk · Attention, perception and consciousness

Bistable illusions, such as the notorious Rubin vase, are an insightful tool for studying spontaneous perceptual alternations. However, such illusions have been investigated primarily in vision, leaving open the question of whether similar dynamic principles regulate perception in other sensory modalities. To test this possibility, we designed the Shepard Swing, a novel auditory bistable stimulus generated by merging two sounds eliciting a continuous sense of rising and falling pitch. To validate our new stimulus, perceived sound direction was assessed via continuous keypress, which enabled precise measurement of how participants switched between sensory interpretations during the task. Overall, we found that all participants experienced numerous and asynchronous spontaneous reversals, with switch phases represented by a positively skewed distribution consistent with canonical bistability. Crucially, perceptual responses were balanced across perceived directions, and switching patterns were independent between participants. We then extended the validation's result by investigating whether auditory endogenous perceptual competition could be influenced by visual input. Finally, we introduced cross-modal conditions in which visual stimuli conveying directional information were aligned with the auditory trace. Interestingly, our findings highlighted systematic interactions in spontaneous perceptual alternations between the two modalities, expanding on existing results showing that auditory cues can influence visual bistability. Taken together, our results support the implementation of the Shepard Swing as a potential stimulus to deepen our knowledge about bistable percepts, offering a platform to probe the neural mechanisms underlying perceptual competition beyond the visual modality.

125. Health-related quality of life in people with multiple sclerosis, what matters most? Exploring preference heterogeneity using a discrete choice experiment in Italy

Edoardo Donarelli¹, Silvia Testa², Paola Cavalla³, Alessia Di Sapio⁴, Maria Grazia Grasso⁵, Paolo Confalonieri⁶, Eleonora Cocco⁷, Francesco Patti⁸, Rosalba Rosato¹

¹ Department of Psychology, University of Turin, Turin, Italy

² Department of Human and Social Sciences, University of Aosta Valley, Aosta, Italy

³ Department of Neuroscience, University of Turin, Turin, Italy

⁴ Department of Neurology and CRESM, University Hospital San Luigi Gonzaga, Orbassano, Italy

⁵ Multiple Sclerosis Centre, IRCCS Fondazione Santa Lucia, Rome, Italy

⁶ Multiple Sclerosis Centre, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy

⁷ Department of Medical Science and Public Health, University of Cagliari, and Multiple Sclerosis Centre, ASL Cagliari, ATS Sardegna, Cagliari, Italy

⁸ Department of Medical, Surgical and Advanced Technologies 'G.F. Ingrassia', University of Catania, Catania, Italy

Mini-talk · Health, sport and wellbeing

Multiple sclerosis (MS) affects numerous health-related quality of life (HRQoL) domains. Previous research suggests that people with MS (PwMS) differ in how they prioritize HRQoL domains. This study aimed to identify the most relevant HRQoL domains in MS, quantify PwMS' importance rankings, and investigate preference heterogeneity. A systematic review and a preliminary qualitative study involving PwMS informed the selection of five most relevant HRQoL domains in MS, used as attributes in a discrete choice experiment (DCE): physical activities, fatigue, anxiety and/or depression, concentration and/or attention, and social life. The attribute levels defined pairs of hypothetical individuals with different health statuses, and PwMS chose the one considered better off. A panel latent class multinomial logit model was selected. 900 PwMS completed the survey. Three distinct latent classes emerged: one primarily concerned with physical activities, one with social life, and one with anxiety and/or depression. The average class membership probabilities were 45.9%, 27.8%, and 26.3%, respectively; but age was found to significantly influence them: older PwMS exhibited a higher probability of belonging to the class focused on social life (34.1%) and a lower probability of belonging to the class focused on anxiety and/or depression (20.6%); younger PwMS showed the opposite pattern, with probabilities of 21.5% and 32.1%, respectively. This study showed that three latent classes of PwMS rank the importance of HRQoL domains differently, and that age influences class membership probabilities. Patient priorities regarding HRQoL should be recognized by clinicians and policymakers to maximize the quality of life of PwMS.

E

126. The shortIRT R package for developing tests in an item response theory framework

Marina Ottavia Epifania¹, Egidio Robusto², Livio Finos³, Pasquale Anselmi²

¹ Università di Trento, Dipartimento di Psicologia e Scienze Cognitive

² Università di Padova, Dipartimento di Filosofia, Sociologia, Pedagogia e Psicologia Applicata

³ Università di Padova, Dipartimento di Scienze Statistiche

Mini-talk · Methodology

Item Response Theory (IRT) represents an ideal framework for developing tests from item banks able to address specific aims, such as the reliable measure of different latent trait levels or the accurate identification of at-risk respondents performing under a certain cut-off. Such aims can be fulfilled by exploiting the detailed information that IRT models provide on the measurement precision of the items with respect to different latent trait levels. The shortIRT R package (available on CRAN at <https://cran.r-project.org/web/packages/shortIRT/index.html>) implements recently introduced procedures for the development of either tests from item banks or short forms from full-length tests. The implemented procedures differ according to different features, such as the a-priori definition of the number of items composing the tests and the definition of the latent trait of interest for the assessment. The target latent trait can be conceived as either discrete levels – for which the information must be maximized – or as a continuous information function – from which the distance must be minimized. The shortIRT package is meant for both dichotomous and polytomous items, and it allows for comparing the results obtained from the different procedures. The procedures implemented in the package are conceptually similar to the automated test

assembly. The main features of the shortIRT package are illustrated, together with some examples on both simulated and real item banks.

127. Cognitive effort: a review of theoretical models, contextual modulations, and empirical findings

Giulio Errico¹, Pierpaolo Zivi², Stefano Sdoia², Fabio Ferlazzo²

¹ Dipartimento di Psicologia, università La Sapienza di Roma

² Dipartimento di psicologia, università di Roma La Sapienza

Poster · Attention, perception and consciousness

La presente revisione si propone di confrontare i principali modelli teorici che spiegano come decidiamo se persistere, ridurre o interrompere l'investimento di sforzo cognitivo, distinguendo tra approcci basati su risorse limitate e modelli motivazionali/costo-beneficio. L'obiettivo è valutare quali modelli trovino maggiore sostegno empirico, esplorare la possibilità di un'integrazione teorica e colmare la lacuna dell'Adaptive Gain Theory rispetto ai meccanismi attraverso cui il cervello valuta l'utilità di un comportamento. È stata condotta una ricerca della letteratura su Scopus, PubMed, PsycInfo e PsycArticles, includendo 103 studi sperimentali su adulti sani, codificati per paradigma, modello teorico, tipo di outcome (comportamentale, soggettivo, fisiologico) e risultati principali. I modelli teorici mostrano un'evoluzione dalle prospettive basate su risorse limitate verso concezioni più motivazionali dello sforzo. L'effort discounting emerge come fenomeno robusto, con svalutazione sistematica delle ricompense ad alto impegno cognitivo. I fattori contestuali (valutazione sociale, noia, instabilità ambientale, storia delle ricompense) modulano significativamente le scelte di investimento di effort. Le evidenze sui paradigmi di ego depletion indeboliscono lo strength model a favore di interpretazioni motivazionali e regolative, mentre la fatigue appare non come indice di esaurimento, ma come segnale adattivo che orienta persistenza e disimpegno. I risultati suggeriscono che modelli a risorse e motivazionali rappresentino prospettive complementari, integrabili in una cornice unitaria che apre alla verifica sperimentale delle previsioni dell'Adaptive Gain Theory mediante modelli computazionali e indicatori fisiologici come la pupillometria.

F

128. Nudging sustainable food choices: early discounts and consumer behavior in reducing food waste

Giulia Fabrizi¹, Paola Iannello, Gloria Ballestrasse

¹ Almar Quality Research

Poster · Reasoning and abstract cognition

Food waste is a widespread phenomenon. To meet the growing sustainability expectations of large-scale retail chains and consumers, stores implement strategies aimed at encouraging the purchase of products about to expire by increasing their visibility and offering discounts. However, the current approach overlooks consumers' optimal quality standards and their need to plan weekly meals, resulting in economic inefficiency. This pilot study investigates whether the early application of economic incentives, several days before the products' withdrawal date, increases purchase propensity compared to the current strategy. To this end, a two-phase design was

adopted. The first phase involved six semi-structured interviews with store managers, while the second consisted of an online survey conducted on a sample of consumers (N = 100). Both phases were structured around choice scenarios, optimized based on the evidence emerging from the previous phase. Qualitative results show positive evaluations of the strategy, while quantitative findings indicate higher levels of purchase intention for products with a shorter remaining shelf life, even in the presence of alternatives with longer expiration dates, when associated with a discount. This effect is also observed among those who have never adhered to the currently used strategy, although with significantly lower intensity compared to those who more frequently purchase products nearing expiration. These findings suggest that the intervention may counteract the systematic selection of products with longer expiration dates, with potential implications for reducing food waste and improving retailers' economic efficiency. Future studies should quantify the economic, environmental, and social impact of its implementation.

129. Differenze regionali nei valori normativi dei test neuropsicologici: un'analisi sperimentale

Alessio Facchin¹, Alessandro Geria², Alessandra Ferrigno², Francesca Gangale², Fabio Pirrotta³

¹ Dipartimento di Scienze umane e sociali, Università Mercatorum, Roma.

² Università degli Studi Magna Graecia, Catanzaro.

³ Azienda Sanitaria Provinciale Reggio Calabria.

Mini-talk · Methodology

Negli ultimi anni sono stati proposti diversi valori normativi per i test neuropsicologici di screening, quali il MMSE e il MoCA, in un contesto più regionale, che nazionale. Tale approccio deriva da evidenze preliminari che hanno suggerito solamente l'esistenza di differenze sebbene mai confermate empiricamente. Il presente studio si propone di confrontare le prestazioni al MoCA tra due contesti regionali italiani, Lombardia e Calabria, controllando per potenziali fattori confondenti quali età, scolarità, sesso e contesto urbano di riferimento. Sono stati reclutati adulti neurologicamente sani, senza anamnesi di patologie neurologiche. La dimensione campionaria è stata definita a priori al fine di garantire una potenza statistica adeguata a rilevare differenze inferiori a un punto al MoCA. I risultati hanno mostrato una differenza significativa al punteggio totale del MoCA, controllando per tutte le variabili demografiche considerate. Questo risultato è stato confermato anche dopo aver bilanciato il campione con la procedura di propensity score matching e utilizzato la procedura TOST per il confronto. I risultati mostrano effettivamente una differenza tra valori medi, ma ciò significa direttamente la necessità di valori normativi di riferimento differenti, oppure ci potrebbero essere altri aspetti non considerati che potrebbero spiegare il risultato.

130. Elaborazione estetica implicita e priming emotivo: uno studio di risonanza magnetica funzionale su stimoli artistici e non artistici

Sabrina Fagioli¹, Giulia Bechi-Gabrielli², Marco Bozzali³, Emiliano Macaluso⁴, Stefano Mastandrea¹

¹ Roma Tre University, Department of Education

² Department of Human Neuroscience, Sapienza University of Rome

³ Department of Neuroscience "Rita Levi Montalcini", University of Turin

⁴ Centre de Recherche en Neurosciences de Lyon (CRNL), Université Claude Bernard Lyon 1

Intervento in simposio · Emotions and motivation

Sono sempre più numerose le evidenze empiriche che dimostrano come la fruizione di immagini d'arte possa promuovere il benessere psicofisico, anche quando le opere veicolano contenuti emotivi negativi, cruenti o disturbanti, suggerendo che le emozioni estetiche presentino caratteristiche peculiari rispetto alle emozioni utilitarie. Al fine di approfondire la natura di tali emozioni, il presente studio ha esaminato se l'elaborazione implicita di immagini artistiche, con valenza emotiva positiva, neutra o negativa, rispetto a immagini non artistiche, influenzi la successiva elaborazione affettiva di uno stimolo neutro. Utilizzando l'Affective Misattribution Procedure (AMP) durante un'acquisizione fMRI, 22 partecipanti hanno valutato uno stimolo neutro (un pittogramma cinese) presentato dopo una breve esposizione a immagini emotivamente connotate, artistiche o non artistiche. I risultati comportamentali hanno mostrato che le immagini a valenza positiva, indipendentemente dalla loro natura, determinavano un maggiore gradimento dello stimolo neutro successivo. A livello neurale, l'elaborazione implicita di immagini artistiche, rispetto a quelle non artistiche, risultava associata all'attivazione del nucleo caudato sinistro, mentre le immagini a valenza negativa attivavano la corteccia prefrontale ventrolaterale sinistra. Inoltre, considerando le valutazioni soggettive, la valenza negativa veicolata da stimoli artistici modulava l'attività delle aree occipitali, suggerendo un effetto di regolazione dell'elaborazione visiva di contenuti emotivamente negativi. Nel loro insieme, questi risultati indicano che l'arte è in grado di modulare l'intensità delle emozioni negative e può rappresentare uno strumento rilevante per l'engagement emotivo in diversi contesti, contribuendo ai processi di regolazione affettiva e alla promozione del benessere.

131. L'identità ecologica nei Giovani Adulti: il ruolo dell'empatia nella relazione tra antagonismo e identità ecologica

Giorgia Farruggio¹, Giorgio Campo¹, Siria Cibella¹, Elisa Viscuso¹, Giulia Tomasello¹, Ugo Pace¹, Alessia Passanisi¹

¹ Università degli Studi di Enna "Kore", Dipartimento di Scienze dell'uomo e della società

Mini-talk · Life cycle (e.g., development and aging)

L'identità ecologica, la percezione di sé come parte integrante del mondo naturale, è stata costantemente associata ad atteggiamenti e comportamenti pro-ambientali. Tuttavia, i meccanismi psicologici attraverso cui i tratti di personalità disadattivi si relazionano a questo costrutto identitario rimangono poco esplorati. Il presente studio trasversale ha esaminato le associazioni tra antagonismo, componenti affettiva e cognitiva dell'empatia (rispettivamente preoccupazione empatica e prospettiva dell'altro) e identità ecologica, ipotizzando un ruolo mediatore dei processi empatici. Un questionario è stato somministrato a 260 giovani adulti ($M = 20.31$, $DS = 3.77$), che hanno completato l'Ecological Identity Scale, l'Interpersonal Reactivity Index e il PID-5-BF. Le analisi di mediazione parallela sono state condotte tramite la macro PROCESS per SPSS, con effetti indiretti testati mediante bootstrapping con 5.000 ricampionamenti. L'antagonismo è risultato negativamente associato all'identità ecologica, spiegando una piccola quota di varianza ($R^2 = .034$). Sia la preoccupazione empatica che la prospettiva dell'altro sono emersi come mediatori parziali significativi della relazione tra antagonismo e identità ecologica. Il modello di mediazione parallela completo ha spiegato l'11.8% della varianza nell'identità ecologica ($R^2 = .118$), corrispondente a una dimensione dell'effetto da piccola a moderata.

Complessivamente, i risultati sottolineano la rilevanza dell'empatia come meccanismo relazionale rilevante nel legame tra personalità maladattiva e identità ecologica, contribuendo a una comprensione più articolata di come i tratti di personalità disadattivi si associno alle differenze individuali nell'engagement ambientale.

132. Visual speech supports phonetic attunement in the absence of early auditory input

Alessandra Federici¹, Marta Fantoni¹, Chiara Battaglini¹, Francesca Collesei¹, Eva Orzan², Giacomo Handjaras¹, Giovanni Di Liberto³, Davide Bottari¹

¹ IMT School for Advanced Studies Lucca

² IRCCS Materno Infantile Burlo Garofolo

³ School of Computer Science and Statistics, University of Dublin, Trinity College

Intervento in simposio · Language, reading and music

The first year of life is considered a critical period for the acquisition of phonetic categories, a hallmark of successful native language specialization. Whether this process depends on early auditory experience or intrinsic biological constraints remains unresolved. We measured neural encoding of natural speech in hearing children (HC) and cochlear implant (CI) users with congenital or acquired deafness, contrasting children with and without auditory input in the first year of life. Speech encoding was present across all groups, but its specificity depended on early input: auditory phonetic features were encoded only in children exposed to speech within the first year, whereas visually discriminable phonetic features were encoded regardless of auditory deprivation. These findings show that early sensory input gates phonetic attunement, while its underlying constraints are not modality-specific, revealing a critical period that is modality-flexible in mechanism and experience-dependent in expression.

133. Physiological Markers of Food Preference in Virtual Reality: Choice Prediction, Embodied Affective Responses, and Olfactory Modulation

Francesca Ferraioli¹, Chiara Lucifora², Simona Massimino³, Carmelo Mario Vicario⁴

¹ Università di Messina

² Università degli Studi LINK di Roma

³ Università degli Studi di Messina

⁴ Università degli Studi di Messina

Mini-talk · Emotions and motivation

Food preferences emerge from the interaction between explicit evaluations, motivational context, and implicit affective bodily responses. In two experimental studies, we investigated whether peripheral electrophysiological indices capture embodied components of food preference formation during choice in immersive virtual reality. Study 1 examined electromyographic and electrodermal predictors of preference ratings in a virtual supermarket under different motivational contexts. Study 2 extends this paradigm by introducing pleasant and unpleasant ambient odors. Following a pre-test on 30 participants, apple was selected as the pleasant odor and fish as the unpleasant odor. Data collection for Study 2 is ongoing. In Study 1, physiological and behavioral predictors of preference were tested through linear mixed-effects models with participant-specific random intercepts. Physiological activity was extracted from the pre-selection phase, defined as the window immediately preceding grabbing execution signaling the food selection. In the full model, submental EMG emerged as the only electrophysiological predictor of preference,

whereas zygomaticus, levator labii, and electrodermal activity did not significantly contribute to preference prediction. A parsimonious model confirmed that higher submental EMG predicted higher preference ratings, $\beta = 0.32$, $p = .020$. Shopping condition contributed to preference ratings, with lower scores in the disliked condition, $\beta = -5.46$, $p < .0001$, and higher scores in the hedonic condition, $\beta = 0.49$, $p = .015$. Reward-related impulsivity, measured by temporal discounting, was positively associated with preference, $\beta = 3.71$, $p = .037$. Pleasant and unpleasant odors are expected to respectively enhance or reduce preference and purchase ratings, while modulating physiological indices of appetitive and aversive responses.

134. Emotions and Social Behavior: Mapping Perceived Social Distance Under Guilt and Shame

Deborah Ferrante¹, Vanda Lamberti², Francesca D'Olimpio²

¹ Università di Trento

² Università degli Studi della Campania Luigi Vanvitelli

Mini-talk · Emotions and motivation

Emotions play a central role in shaping social behavior, yet their influence on the internal representation of interpersonal distance remains poorly understood. This gap is especially relevant for guilt, a heterogeneous emotion comprising distinct forms that may differentially structure social space. Here, we tested whether deontological guilt uniquely reorganizes perceived social space relative to other emotional states. Perceived social distance was assessed using a novel spatial task in which participants arranged multiple social agents—including the Self, the Other, Observers, and Ethics (i.e., moral norms)—within a shared representational space, thereby enabling the quantification of relative distances. Results revealed that the distance between the Self and Observers decreased across emotional conditions, suggesting an increased salience of social evaluation. Crucially, the greatest distance between the Self and Ethics was observed in the deontological guilt condition, indicating a distinctive reconfiguration of moral space. Notably, this study provides the first evidence that deontological and altruistic guilt are associated with qualitatively distinct configurations of perceived social space, advancing our understanding of the representational consequences of different forms of guilt. From a clinical perspective, these findings highlight perceived social distance as a potential mechanism linking moral emotions to difficulties in interpersonal functioning, including social withdrawal and loneliness.

135. Question or statement? How the brain processes and integrates audiovisual signals to understand communicative intentions

Ambra Ferrari¹, Giuseppe Rabini¹, James Trujillo², Maria Laura Mencaroni³, Judith Holler⁴, Francesco Pavani¹, Stefania Benetti¹

¹ University of Trento, CIMEC

² University of Amsterdam, Faculty of Science

³ University of Trento, Department of Psychology and Cognitive Sciences

⁴ Radboud University, Donders Institute for Brain Cognition and Behaviour

Mini-talk · Language, reading and music

In everyday face-to-face interaction, listeners must process and integrate vocal and facial cues to infer the speaker's communicative intent, such as distinguishing a question from a statement. How does the brain accomplish this complex feat? We tested the hypothesis that multisensory cues of

communicative intention are processed and integrated along a lateral processing pathway (LPP) projecting from auditory and visual regions to the superior temporal sulcus (STS). Using fMRI, we asked: (1) How are vocal and facial information represented along the cortical hierarchy? (2) How does the brain integrate or segregate concurrent vocal and facial features? (3) How are these features flexibly read out depending on task demands? Participants (N=17) watched videos of a human avatar producing one-word utterances. Vocal (prosodic pitch) and facial (eyebrow movements) cues were orthogonally manipulated along a four-step continuum from question to statement, generating congruent and incongruent audiovisual combinations. A post-stimulus cue instructed participants to classify the utterance as a question or statement based on either vocal or facial information. Whole-brain multivariate pattern classification showed that vocal and facial information were represented along the LPP, converging in the posterior STS. ROI-based multivariate pattern regression revealed that audiovisual integration varied with cue congruency, particularly along the STS, highlighting the brain's computational flexibility in resolving ambiguity. Whole-brain univariate and ROI-based multivariate results showed that top-down task demands dynamically modulated LPP engagement, with effects extending to language-related and cognitive control areas. Collectively, these findings provide novel insight into how the brain realizes communicative intentions in face-to-face interaction.

136. The role of the cerebellum in empathic processes: A tACS study

chiara ferrari¹, Federica Contò², Sonia Paternò³, Alessia Rosetta³, Andrea Ciricugno⁴, Zaira Cattaneo²

¹ University of Pavia

² Dipartimento di Scienze Umane e Sociali, Università di Bergamo

³ Dipartimento di Scienze del Sistema Nervoso e del Comportamento, Università di Pavia

⁴ IRCCS Fondazione Mondino

Poster · Social cognition

It is now well established that the posterior cerebellum is strongly implicated in a wide range of cognitive functions, including social cognition, a set of mental processes that enable humans to interact successfully with others. Recent evidence suggests a possible link between the cerebellum and empathy. Extensive cerebellar-cortico-limbic connections indicate that the cerebellum is an important hub in the neural network underlying empathic abilities, and some authors proposed that the cerebellum represents an embodied machine that provides internal models to integrate bodily information and emotional responses, a mechanism that is particularly relevant for empathy. In this study, we investigated for the first time the role of the cerebellum in empathic processes by developing the Italian version of the empathic accuracy task and combining it with cerebellar transcranial alternating current stimulation (tACS). The task involved presenting participants with videos of individuals (targets) narrating personal emotional stories, which participants continuously evaluated for emotional valence. This task provides a measure of empathic accuracy (EA), defined as the degree of correspondence between what the target feels and what the participants think the target feels. Participants performed the task while receiving gamma-, theta-, or sham tACS targeting the cerebellar vermis. In addition, empathy was assessed by measuring the magnitude of physiological emotional responses to the videos using participants' vagally mediated heart rate variability (HRV). Preliminary results

suggest a potential role of the cerebellum in mediating both behavioral (EA) and physiological (HRV) components of empathy in a frequency-dependent manner.

137. Disentangling explicit and implicit timing mechanisms: a tACS study on the role of the Supplementary Motor Area

Irene Ferraro¹, Luigi Micillo², Giovanna Mioni²

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

² Università degli Studi di Padova

Poster · Space, time and number

The mechanisms underlying temporal judgments and the distinction between implicit and explicit timing have gained increased interest. Neuroimaging studies have highlighted the role of the Supplementary Motor Area (SMA) in temporal processing across different tasks and interval durations. Growing evidence also suggests that beta-band oscillations are involved in temporal processing across both implicit and explicit timing tasks. However, the specific mechanisms contributing to implicit and explicit timing remain unclear. A previous study by Capizzi and colleagues (2023) demonstrated that modulating SMA activity using High-Definition transcranial Random Noise Stimulation (HD-tRNS) induced a shift in perceived duration. The present study aimed to investigate the causal role of SMA in explicit and implicit timing using transcranial Alternating Current Stimulation (tACS). Thirty-three students completed two tasks involving identical stimulus presentations but differing in task instructions, requiring either explicit or implicit temporal judgments. During task execution, 15 Hz tACS (within the beta frequency range) was applied over the SMA. Additionally, EEG resting-state measurements were acquired before and after stimulation. Results showed a modulatory effect of stimulation over the SMA, leading to increased precision in explicit timing tasks. No effects were observed in implicit timing tasks, possibly reflecting a ceiling effect in young participants. These findings suggest a functional dissociation between explicit and implicit timing at the level of the SMA, with beta-band oscillations selectively contributing to explicit temporal processing.

138. Emotional and Antisocial Trends in Italian Song Lyrics: A Longitudinal Analysis of the Sanremo Corpus (1951–2025)

Laura Ferreri¹, Ilayda Sen¹, Carlotta Lega¹

¹ Università di Pavia

Mini-talk · Language, reading and music

Song lyrics are a central component of music, reflecting and shaping emotional expression, social norms, and cultural values over time. Previous research suggests a decline in positive emotions alongside an increase in negative emotions and antisocial themes in popular music, yet evidence from the Italian context remains scarce. This study addresses this gap by examining longitudinal changes in emotional expression and antisocial content in Italian popular song lyrics, and their relationship with commercial success. A corpus of 225 songs (top three placements) from the Sanremo Music Festival (1951–2025) was analyzed using LIWC-22. Results indicate a significant decline in positive emotion words alongside an increase in negative emotion words and antisocial themes over time in the Sanremo Corpus, with similar patterns observed among higher-ranked songs in Italian music charts. Overall, the findings indicate long-term shifts in the emotional and thematic landscape of Italian popular music. This study contributes to

understanding how lyrical content both reflects and potentially influences broader socio-cultural dynamics.

139. Effetto del potenziamento con action-like video game sull'efficienza del circuito magnocellulare dorsale in bambini prescolari con e senza delezione del gene DCDC2.

Chiara Filotto¹

¹ Università degli Studi di Padova

Poster · Attention, perception and consciousness

La dislessia (D) è un disturbo del neurosviluppo a eziologia multifattoriale. Tra i fattori genetici di rischio, la delezione nell'introne 2 del gene DCDC2 è stata associata a un'alterazione della via magnocellulare-dorsale (MD), implicata nella percezione del movimento e spesso deficitaria nei bambini con D. Evidenze recenti suggeriscono che fattori ambientali arricchiti, come il gioco, possano promuovere cambiamenti epigenetici e sostenere lo sviluppo cognitivo e l'apprendimento. In particolare, la letteratura evidenzia come i videogiochi d'azione (VGA) possano migliorare il funzionamento della via MD in bambini con D già diagnosticata. Il presente studio ha indagato l'efficacia di un intervento di potenziamento mediante VGA in bambini dell'ultimo anno della scuola dell'infanzia, con e senza delezione del gene DCDC2. L'ipotesi è che tale intervento possa agire come fattore protettivo, contribuendo a ridurre il rischio di difficoltà di lettura nei soggetti geneticamente predisposti e configurandosi come strumento di prevenzione precoce. I partecipanti sono stati sottoposti a una valutazione pre e post intervento del funzionamento della via MD mediante Coherent Dot Motion (CDM) e a un training in piccoli gruppi con VGA (15–20 sessioni di 45 minuti). Le analisi mostrano un deficit della via MD nei bambini con delezione del gene DCDC2 e indicano che il potenziamento con VGA ne migliora il funzionamento, senza effetti differenziali legati alla delezione. Quest'ultimo risultato potrebbe indicare che, in età prescolare, l'elevata plasticità della via MD consenta miglioramenti comparabili sia in presenza che in assenza di rischio genetico, supportando interventi precoci.

140. Social-Digital Anxiety and Psychological Distress in Emerging Adults: The Mediating Role of Emotional Competencies

Ilaria Fiore¹, Tiziana Lanciano², Federica Alfeo², Flavia Rucci², Danilo Mitaritonna², Cristina Cabras³, Omar Carlo Gioacchino Gelo⁴, Maria Grazia Lo Cricchio⁵, Antonietta Curci²

¹ Università degli Studi di Bari Aldo Moro

² Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

³ University of Cagliari, Dipartimento di Pedagogia, Psicologia Filosofica

⁴ Università del Salento, Dipartimento di Scienze umane e Sociali; Faculty of Psychotherapy Science Sigmund Freud University Vienna

⁵ Università degli Studi della Basilicata, Dipartimento di Scienze Umane

Mini-talk · Emotions and motivation

The contemporary sociocultural landscape is characterized by pervasive digitalization, in which technological artefacts such as smartphones and PCs have transcended their original utilitarian functions. These technologies no longer serve merely as tools for productivity but have evolved into primary mediators of interpersonal relationships, particularly during emerging adulthood, a critical life stage marked by the transition from adolescence to adulthood. The present study is part of the national ministerial project MoEBIUS (PRO-BEN 1159/23), developed by a consortium of ten partners across universities and AFAM institutions. It aims to investigate whether, and to

what extent, digital social anxiety represents a vulnerability factor for psychological distress in young adults, by examining its associations with emotional competencies and internalizing symptoms. Specifically, we hypothesized that higher levels of Fear of Missing Out (FoMO), phubbing, and nomophobia are associated with poorer emotional competencies, which, in turn, are linked to higher levels of anxiety and depressive symptoms. The study included a sample of 1,301 university students who completed an online survey administered via the Qualtrics platform. Our findings show that digital stressors (FoMO, phubbing, and nomophobia) are associated with higher levels of anxiety and depression and with poorer emotional regulation and expression. Emotion regulation partially mediates this relationship, suggesting that reduced emotional competence represents a core vulnerability among emerging adults. These results highlight the need for interventions targeting emotional and metacognitive skills to promote healthier engagement with digital environments and protect mental health outcomes.

141. Influenza dei sintomi depressivi sulla valutazione emotiva ed edonica delle opere d'arte

Giulia Fiorentini¹, Alessandra Santona¹, Rossana Actis Grosso¹

¹ Università degli Studi di Milano-Bicocca

Poster · Emotions and motivation

L'esperienza estetica implica l'apprezzamento delle opere d'arte e il piacere che da esse deriva, ed è fortemente modulata da fattori individuali. I sintomi depressivi rivestono un ruolo centrale nella percezione e valutazione degli stimoli emotivi, essendo associati a un bias di negatività, anedonia e preferenza per stimoli mood-congruenti. Il presente studio, svolto in modalità online, indaga se tali condizioni si estendano anche alla percezione delle opere d'arte. I partecipanti (N = 346) hanno osservato 45 opere d'arte (15 negative, 15 neutre, 15 positive), selezionate dal Vienna Art Picture System (VAPS) database, e le hanno valutate in termini di valenza, arousal, liking e familiarità, completando un questionario che misura la gravità della sintomatologia depressiva (BDI-II) e altri questionari standardizzati relativi ad altri tratti psicologici (ansia, affettività, qualità della vita, interesse artistico). I dati sono stati analizzati tramite modelli lineari misti. I risultati indicano che, all'aumentare della sintomatologia depressiva, le opere positive vengono valutate come meno positive e meno piacevoli, mentre le opere negative risultano più piacevoli rispetto al trend generale del campione. Non emergono effetti significativi sull'arousal. Variabili individuali – tra cui ansia, familiarità, interesse artistico e qualità della vita – modulano ulteriormente le valutazioni affettive. Nel complesso, i risultati evidenziano un'anedonia specifica verso le opere a valenza positiva e una maggiore preferenza per quelle negative, suggerendo che la depressione moduli selettivamente la risposta estetica in funzione della valenza emotiva. Lo studio offre di conseguenza basi empiriche per esplorare il potenziale dell'arte in ambito clinico e nel promuovere il benessere psicologico.

142. Tool Perception as a Temporally Dynamic Evaluative Process

Irene Florean¹, Luigi Valio², Maria Antonella Brandimonte², Giovanni Federico², Donatella Ferrante¹

¹ Università degli Studi di Trieste

² Università Suor Orsola Benincasa

Mini-talk · Attention, perception and consciousness

Recent accounts of tool perception propose that tool processing reflects a dynamic process, namely action reappraisal, integrating semantic, mechanical, and sensorimotor information. However, how tools are processed in isolation versus context, how attention is allocated to tools and objects, and how these processes unfold over time remain unclear. In an eye-tracking study, participants (N = 30) freely observed isolated tools, thematically consistent tool-object pairs, and inconsistent pairs over a 2800 ms time window. Growth Curve Analysis examined attention toward functional versus manipulation areas of the tool across conditions, and attention toward the tool versus the object in paired conditions. Visual attention toward tool areas differed across conditions over time. Early attention was mainly focused on functional areas across all conditions. In the isolated condition, however, attention toward the manipulation area already increased within the first 500 ms. Then, attention shifted toward manipulation areas and stabilized in the consistent and isolated conditions, while the inconsistent condition showed a less linear trajectory, with a late re-engagement of functional areas. Analysis of tool-object dynamics showed that visual exploration started from the object and then shifted toward the tool. Crucially, attention to the object remained higher in the inconsistent condition across most of the time window. These findings suggest that tool perception unfolds as a dynamic evaluative process, in which the object defines the action problem and the tool constrains its possible solution. When this mapping is unclear, processing returns to earlier evaluative stages. Theoretical implications for accounts of tool perception will be discussed.

143. Cognitive Coherence Breakdown in MCI: A Multi-Task Investigation of Control Dynamics

Giuseppe Forte¹, Ilaria Corbo¹, Francesca Favieri², Maria Casagrande¹

¹ Department of Dynamic, Clinical Psychology and Health "Sapienza" University of Rome

² Department of Psychology, University "G. d'Annunzio" of Chieti-Pescara

Mini-talk · Life cycle (e.g., development and aging)

Aging is increasingly conceptualized as a dynamic reorganization of cognitive systems. Within this framework, Mild Cognitive Impairment (MCI) may reflect a disruption in the coherence of cognitive control rather than a uniform decline. We hypothesize a cognitive coherence pattern, whereby deficits emerge under conditions requiring stable maintenance and integration of goal-relevant information across competing demands and increased load. Older adults with MCI and cognitively healthy controls completed four executive tasks probing complementary control processes: Stroop (interference resolution), Simon (spatial conflict), Go/No-Go (response inhibition), and N-back (working memory updating). Performance was assessed using reaction times, accuracy, and inverse efficiency scores. Groups were comparable in demographic variables, while MCI participants showed lower global cognition and fluid reasoning. Executive performance revealed a selective, load-dependent impairment. Significant group differences emerged in interference-based conditions and in high-load working memory. In contrast, simple inhibitory control showed only marginal differences. This pattern indicates that deficits are not global but arise specifically when tasks require dynamic coordination of competing representations. Findings support a cognitive coherence breakdown account of MCI, characterized by reduced efficiency in maintaining goal-relevant information under conflict and load. Within a control-dynamics framework, this profile is consistent with

impaired proactive control and increased reliance on reactive mechanisms. Conceptualizing MCI in terms of disrupted cognitive coherence may offer a more sensitive marker of early cognitive vulnerability and inform targeted experimental and clinical approaches.

144. Reduced thermal homeostasis efficiency is associated with greater vulnerability to alterations in body ownership

Alara France¹, Gabriella Bottini², Gerardo Salvato²

¹ University of Pavia, Department of Brain and Behavioral Sciences

² Department of Brain and Behavioral Sciences, University of Pavia
Cognitive Neuropsychology Centre, ASST Grande Ospedale Metropolitano
Niguarda, Milano; Neuromi, Milan Center for Neuroscience, Milano, Italy

Mini-talk · Attention, perception and consciousness

Thermosensory signals are involved in thermal homeostasis, the physiological mechanism that maintains thermoneutrality and restores balance after perturbations. These signals have recently attracted attention in research on body ownership, the sense that the body and its parts belong to oneself. Indeed, research has shown that shifts in hand ownership correlate with changes in hand skin temperature. However, it remains unclear whether changes in skin temperature and variations in individual thermal homeostasis efficiency are associated with temporary or more stable alterations in body ownership. To this aim, 36 male participants underwent a Cold Exposure Test consisting of 3 minutes of hand immersion in 10°C water. Hand skin temperatures were recorded immediately after cold exposure and at 15 and 30 minutes. Based on a 30-minute recovery, participants were classified as faster or slower rewarmers. Temporary body ownership was assessed before and after cold exposure, and stable body ownership was measured through questionnaires assessing alterations of body ownership and embodiment (i.e., out-of-body experiences). Results showed that slower rewarmers reported reduced momentary body ownership after cold exposure, whereas faster rewarmers showed no reduction in this feeling. A less effective thermal homeostasis was also linked to more stable self-reports of alterations in body ownership, such as the presence of body part disownership and out-of-body experiences. These findings suggest that reduced capacity to restore thermal balance is linked to diminished body ownership and to more persistent disturbances of this feeling, supporting an active role of thermosensory signals in constructing and maintaining the sense of bodily self.

145. When Layout Meets Syntax: The Role of Line Break Placement in Sentence Reading

Laura Franzoi¹, Claudio Mulatti¹, Michael Chan-Reynolds², Barbara Treccani¹

¹ Università di Trento, Dipartimento di Psicologia e Scienze Cognitive

² Trent University (Canada), Psychology Department

Poster · Language, reading and music

Typographic features such as font type, character size, and spacing are well known to influence visual and cognitive processing during reading. By contrast, the effects of other typographic variables, including layout and line-break placement, remain comparatively underexplored. Notably, most printed materials are fully justified rather than left-aligned, and line breaks are therefore determined by spatial constraints rather than linguistic factors. This raises the question of whether line-break placement influences reading fluency. The present study investigates how line-break placement interacts with

syntactic structure during reading, and whether alignment or misalignment between visual and syntactic segmentation affects reading fluency. Short sentences were presented on screen: in the aligned condition, breaks respected natural syntactic groupings; in the misaligned condition, they disrupted closely related constituents (e.g., noun phrases), creating a mismatch between visual segmentation and syntactic structure. Twenty-four university students read the sentences silently while sentence-level reading times were recorded. Comprehension questions ensured attentive reading. Results indicate that less predictable line breaks lead to longer reading times, particularly when they disrupt strong syntactic constituents. This pattern suggests increased processing costs due to disrupted parsing. Crucially, this effect emerges even in skilled adult readers under relatively naturalistic reading conditions. Moreover, it remains significant when controlling for sentence length and is observed both across participants and items. These findings highlight the role of typographic layout in reading and demonstrate that subtle formatting choices, such as line-break placement, can influence reading fluency, with important implications for the design of accessible texts, especially for readers with reading difficulties.

146. Neuroarchitettura e esperienza spaziale: percezione, benessere e comportamento negli ambienti costruiti

Martina Frattura¹, Zaira Cattaneo², Annarita Ferrante³

¹ Università di Bologna, Dipartimento di Architettura

² Università degli Studi di Bergamo, Dipartimento di Scienze Umane e Sociali

³ Università di Bologna, Dipartimento di Architettura

Intervento in simposio · Attention, perception and consciousness

L'architettura non è un contenitore neutro dell'esperienza umana, ma un sistema attivo e permeabile che modula percezione, emozioni, comportamento e benessere. Questo contributo propone una lettura "neuroarchitettónica" dell'esperienza spaziale, integrando prospettive delle scienze cognitive e delle neuroscienze per mostrare come gli ambienti costruiti influenzino i processi di valutazione soggettiva e le risposte adattive dell'individuo. A partire dal dibattito su percezione e cognizione incarnata, situata ed enattiva, si sostiene che l'esperienza architettónica non sia una mera ricezione passiva dello spazio, ma un processo dinamico di interazione tra corpo, ambiente e memoria. In questa prospettiva, la qualità degli spazi dipende non solo da parametri fisici misurabili, come luce, acustica e configurazione spaziale, ma anche dai significati attribuiti dai soggetti e dalle loro esperienze pregresse, che orientano aspettative e comfort. Il contributo discute quindi la Triade Neuroestetica (Coherence, Hominess, Fascination) come framework operativo per leggere la qualità dell'esperienza spaziale in termini di coerenza percettiva, senso di appartenenza e coinvolgimento attentivo. L'intento è offrire un quadro teorico sintetico ma aggiornato, capace di leggere l'architettura come dispositivo cognitivo e relazionale, e di evidenziare il potenziale della neuroarchitettura nel dialogo tra ricerca sperimentale e progettazione.

147. The interplay between body ownership and perceived body location

Francesca Frisco¹, Vito Bruno¹, Daniele Romano², Giorgia Tosi¹

¹ University of Milano-Bicocca

² University of Milano-Bicocca

Intervento in simposio · Attention, perception and consciousness

Body ownership, the feeling that the body belongs to oneself, and body location perception arise from multisensory integration and are closely intertwined. I will present two studies investigating whether the ability to predict the body's location contributes to the sense of body ownership. In the first study, we induced illusory body ownership on a virtual hand (i.e., virtual Rubber Hand Illusion, vRHI) or body (i.e., first-person perspective Full-Body Illusion, 1pp-FBI) through a synchronous visuo-tactile stimulation. Crucially, the virtual body could be aligned or misaligned with the real body. Body ownership was assessed via questionnaires and Skin Conductance Responses, while body self-location was measured using a Body Localization Task. Results showed that both illusions elicited body ownership, although reduced in the misaligned 1pp-FBI. Perceived body position shifted toward the virtual body only in misaligned conditions, suggesting spatial recalibration. Correlation analyses showed that the perceived body position influences body ownership only in the 1pp-FBI. In the second study, we manipulated spatial predictions through verbal information before the vRHI induction. Participants were misleadingly informed that their hand would be moved closer to the virtual hand. Misleading verbal information shifted the perceived hand position toward the virtual hand before the illusion, revealing top-down modulation of body spatial perception. However, verbal expectations didn't affect body ownership, which is mainly influenced by multisensory integration. Overall, these findings suggest that ownership and spatial perception are partially dissociated. While multisensory integration robustly drives body ownership and perceived position, body spatial perception can also be shaped by cognitive expectations.

148. The Geometry of Autobiographical Memory: Coordinated Temporal Compression and Importance Fading across the Lifespan

Matteo Frisoni¹, Maddalena Boccia¹

¹ Sapienza University of Rome, Department of Psychology

Poster · Memory

Background: Autobiographical memory shows systematic temporal distortions, but whether these reflect random noise or structured reorganization remains unclear. We tested whether temporal representations undergo period-specific restructuring across the lifespan. Methods: Sixteen healthy adults (mean age = 42.9 ± 3.3 years) recalled 42 events across seven life periods (elementary school to the last 12 months). Temporal placement was measured with a Visual Analogue Scale (VAS) and compared with verbal dating. Linear Mixed-Effects Models estimated compression and displacement per period (1,684 observations). Event importance was rated retrospectively (THEN) and currently (NOW). Results: Two distortion regimes emerged. Remote periods showed central tendency bias, with events compressed toward the period mean ($\beta \approx 0.76$, elementary school; $\beta \approx 0.55$, middle school). Recent periods showed backward telescoping, with relative error increasing with temporal distance ($p < .001$), indicating a transition around ages 19–25. During adolescence, higher initial importance predicted stronger fading ($r = -0.36$, $p < .01$). Spatial gaps on a global lifetime VAS correlated with elapsed time ($r = 0.63$, $p < .05$). Conclusions: Autobiographical memory distortions are structured: identity-formative periods show compression, whereas adult memories follow a flexible timeline dominated by telescoping.

149. A Multimodal MRI Machine Learning Approach for Schizophrenia Classification Across Independent Cohorts, with Extension to Bipolar Disorder

Rosaria Frons¹, Fulvia Campo¹, Alessandro Bertolino¹, Giuseppe Blasi¹, Enrico D'ambrosio¹, Fabio di Camillo¹, LINDA A. Antonucci¹, Nicola Sambuco¹, Giulio Pergola¹

¹ Department of Translational Biomedicine and Neuroscience, University of Bari Aldo Moro, Bari, Italy

Poster · Methodology

Schizophrenia (SCZ) involves widespread structural, functional, and task-evoked brain alterations that partially overlap with bipolar disorder (BD). We tested whether multimodal MRI features generalize across cohorts and whether patterns extend to BD. We developed a support vector machine (SVM) algorithm with double-cycle nested cross-validation across three cohorts totaling 1,858 participants: University of Bari cohorts (UniBa1, N = 663 with 120 SCZ; UniBa2, N = 257 for SCZ classification with 64 SCZ, and N = 211 for BD classification with 53 BD) and an external validation cohort from the Lieber Institute for Brain Development (LIBD, N = 727 with 178 SCZ). Unimodal and multimodal models (57 combinations) integrated brain volume, functional connectivity, working memory activity and emotional face discrimination. For the BD cohort, the same framework was applied. The optimal SCZ model combined functional connectivity, brain volume, and activity during working memory and neutral expression processing (10,000 bootstrap iterations; CBPI = 0.561). Performance was stable across cohorts: UniBa1 (AUC = 0.84; BAC = 76.9%; Sens = 77.9%; Spec = 75.8%), UniBa2 (AUC = 0.68; BAC = 67.0%; Sens = 79.3%; Spec = 54.7%), and LIBD (AUC = 0.83; BAC = 73.5%; Sens = 76.9%; Spec = 70.2%). The model combining brain volume and neutral face contrast was the best-performing in SCZ and BD analyses (CBPI = 0.5062; UniBa2_BD: AUC = 0.73; BAC = 70.4%; Sens = 67.2%; Spec = 73.6%). These findings support a multimodal SCZ signature spanning structural, functional, and task-evoked domains, while suggesting shared informative features across psychosis-spectrum disorders.

G

150. Neural correlates of real and virtual actions: a combined EEG and virtual reality study

Francesca Celestina Rosanna Gala¹, Gaetano Tieri², Valentina Nicolardi, Daniele Di Lernia³, Luana Amadini Genovese⁴, Giulia Magni⁴, Claudia Repetto⁴

¹ Dipartimento di Psicologia, Università Cattolica del Sacro Cuore, Milano

² Virtual Reality and Digital Neuroscience Lab, Department of Law and Digital Society, University of Rome UnitelmaSapienza, 00161 Rome, Italy

³ Department of Theoretical and Applied Sciences, e-Campus University, 22060 Novedrate, CO, Italy

⁴ Department of Psychology, Catholic University of the Sacred Heart, 20123 Milan, Italy

Mini-talk · Action and movement

Virtual reality can alter perceived body movements through an egocentric avatar, creating mismatches between visual feedback and actions. The neural mechanisms underlying how the brain processes these incongruences is still unclear, and this study investigates how the motor system interprets virtual actions that do not match real ones. Twenty-four right-handed young adults completed a virtual reality Go/no-go task, in which

they raised their forearm to touch yellow spheres while avoiding red ones. There were 4 conditions presented in blocks: R-mismatch (real action is a right forearm movement and virtual action shows left forearm moving), L-mismatch (same but reversed), and the corresponding match conditions (right real and virtual action and left real and virtual action, R/L-match). High-density 128-channel EEG were recorded. Embodiment/agency were assessed after each block. EEG data were band-pass filtered (0.1–30 Hz), downsampled to 250 Hz, and decomposed using STFT. Mean power per frequency band was extracted from –800 to –500ms pre-stimulus (FCz–Cz–FC1 ROI). Friedman test revealed significant effect in alpha band, $\chi^2(3)=9.51$, $p=.023$. Post hoc Durbin–Conover indicated differences for R-match/mismatch ($p=.026$) and L-match/mismatch ($p=.026$), showing alpha desynchronization in incongruent conditions (median: R-match=7.04, R-mismatch=3.59; L-match=3.46, L-mismatch=0.42). Paired-samples t-tests, Bonferroni corrected, showed higher embodiment/agency in match conditions for both right and left movements compared to mismatch conditions. Alpha desynchronization in incongruent conditions could reflect the processing of salient and unexpected stimuli and the consequent attentional modulation. Further analyses and source localization are planned to clarify neural correlates of virtual motor actions, with implications for neurorehabilitation.

151. Alternative Real-Time Rewards in Adolescent Intensive Longitudinal Research: The Positive Bites Solution

Anastasia Galkina¹, Elena Torno², Anna Vivencio², Gloria Armento², Michela Zambelli²

¹ Università Cattolica del Sacro Cuore di Milano, Psicologia

² Università Cattolica del Sacro Cuore di Milano

Poster · Methodology

Intensive Longitudinal Designs (ILDs) enable the investigation of within- and between-person processes in everyday life and the detection of low-intensity events often overlooked by traditional methods. Despite these advantages, ILDs are demanding for participants and frequently associated with forgetfulness, noncompliance, missing data, and attrition. Research shows that incentives and rewards can improve compliance in ILDs. A commonly adopted strategy is monetary compensation, particularly through incremental payment schemes (Pihlajamäki et al., 2025). Although effective, financial incentives might raise ethical concerns for some categories of participants. For example, according to the AIP Code of Ethics (AIP, 2025), no monetary incentives to minors are permissible. As a promising alternative, non-economic incentives (e.g., gamification, course credits, motivation feedback), have proven effective in fostering engagement and response quality in ILDs (e.g., Niels van Berkel et al., 2017). This contribution presents the development of “Positive Bites,” a real-time non-monetary reward designed to enhance engagement and compliance among adolescents involved in ILD studies. “Positive Bites” are short science communication videos explaining the psychological and cognitive mechanisms underlying common everyday experiences (e.g., déjà vu, brain rot, phantom vibration syndrome) in accessible, non-technical language. Late adolescents (16–19 years old) evaluated the quality, engagement and perceived effectiveness of “Positive Bites” through experiential co-design workshops conducted in Italian secondary schools within the project “Young and Meaningful”, aimed at developing a framework to support late adolescents in the process of crafting a meaningful life project by using the

daily diary methodology. In our work, we present the results of this evaluation.

152. Efficient power analysis methods for complex statistical models

Filippo Gambarota¹, Enrico Toffalini²

¹ Università di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione

² Università di Padova, Dipartimento di Psicologia Generale

Mini-talk · Methodology

In the era of the replicability crisis, pre-registrations and registered reports have become increasingly common, and journals frequently require sample size justification, typically through power analysis. At the same time, growing methodological awareness has led researchers in psychology and related fields to adopt increasingly complex statistical models, including Bayesian models, generalized linear models, and structural equation models. While power analysis for simple models is often straightforward and can sometimes be solved analytically, complex models usually require Monte Carlo simulation studies. These simulations can be computationally expensive, often taking hours, days, or even weeks, especially when power must be estimated across grids of design conditions, such as numbers of participants, trials, stimuli, or effect sizes. We propose a straightforward adaptive sampling method to drastically reduce the number of simulation iterations required for Monte Carlo-based power analysis, particularly when identifying the design conditions needed to reach a target power level, such as 80%. Instead of allocating the same number of iterations to every condition, the method sequentially prioritizes the most informative regions of the simulation space, avoiding unnecessary computation in conditions unlikely to affect the target decision. We introduce both a parametric version, which is more efficient but relies on assumptions, and a non-parametric version, which is more flexible but less efficient. Because the method operates at the simulation level rather than the model level, it can in principle be applied to any statistical model for which Monte Carlo power analysis is feasible.

153. Emotional Tendencies in Decision-Making: Association with Personality and Metacognitive Appraisal

Domenico Gambino¹, Angelica Daffinà¹, Michela Balconi¹

¹ Università Cattolica del Sacro Cuore

Poster · Emotions and motivation

Understanding decision-making requires integrating cognitive, emotional, and personality-related processes. This study introduces the Digitalized Assessment for Decision-Making (DAsDec), a tool designed to capture multiple dimensions of decision-making and examines its relationships with decision styles, personality traits, and metacognitive appraisal. Participants completed DAsDec, General Decision-Making Style inventory (GDMS), and HEXACO-PI-R. Correlational analyses revealed a pattern centered on emotionally oriented decision-making. The DAsDec index capturing emotional decision tendencies showed a positive association with GDMS spontaneity ($r = .539$, $p < .025$) and a negative association with GDMS rational style ($r = -.633$, $p = .006$), and was also positively related to HEXACO-Openness ($r = .502$, $p = .040$), suggesting a link between emotional decision tendencies and a broader orientation toward experiential and exploratory processing. Furthermore, DAsDec risk-related indices were

positively associated with HEXACO-Emotionality ($r = .556$, $p = .009$) and GDMS spontaneous style ($r = .495$, $p = .23$), and negatively associated with GDMS rational style ($r = -.494$, $p = .023$), indicating that higher affective reactivity is associated with a more intuitive and less deliberative approach to risky choices. From a metacognitive perspective, GDMS spontaneity was negatively associated with perceived decision complexity ($r = -.464$, $p = .030$), suggesting that more intuitive individuals may rely on simplified processing strategies and consequently experience decisions as less demanding. Overall, these findings highlight a consistent pattern linking emotionally oriented decision-making with personality traits, spontaneous decision style, and metacognitive appraisal, supporting the validity of the DAsDec in capturing affective and experiential components of decision processes.

154. Spatial adjectives and demonstratives are integrated into the sensorimotor representation of object nouns.

Gioacchino Garofalo¹, Lucia Riggio², Elena Gherri³

¹ Università di Bologna, Dipartimento di Filosofia

² Università di Parma, Dipartimento di Medicina e Chirurgia

³ Università di Bologna, Dipartimento di Filosofia

Poster · Language, reading and music

Evidence suggests that processing graspable object nouns elicits specific motor programs related to potential hand-object interactions, and that adjectives specifying manipulative features are integrated into this sensorimotor representation. The present study investigated whether words denoting the object's location in space modulate the sensorimotor representation of graspable object nouns. Across two experiments, participants performed a reach-to-grasp compatibility task, categorizing object nouns as artifact or natural by executing a power or precision reach-to-grasp response. The grip can match or not with the typical grip associated with the object. On each trial, the object noun was paired with a second word specifying its location in space. In Experiment 1, the noun was combined with a spatial adjective (vicino vs. lontano). Experiment 2 comprised two tasks: a Spatial Adjective (SA) task, replicating the pairing of Experiment 1, and a Spatial Demonstrative (SD) task, in which the noun was paired with a spatial demonstrative (questo vs. quello). A reliable grasp compatibility effect (RTs difference between incompatible and compatible trials) emerged in both experiments and was modulated differentially by spatial adjectives and spatial demonstratives. With adjective the compatibility between the evoked by the noun is detectable only with near adjective, while with demonstrative the compatibility effect emerged with far demonstrative (quello). These findings indicate that both word classes are integrated into the sensorimotor representation of the noun, suggesting indeed a different spatial representation of the object during the semantic processing of word combinations.

155. From “H0 vs H1” to informative hypotheses testing

Sara Garofalo¹

¹ Department of Psychology, University of Bologna

Intervento in simposio · Methodology

Researchers are often interested in evaluating precise, theory-driven expectations about their data. However, such questions are rarely well captured by the traditional null hypothesis significance testing (NHST) framework, which

typically contrasts a null hypothesis against a broad and often non-informative alternative. As a result, theoretically meaningful predictions remain difficult to test directly within this paradigm. Informative hypothesis testing provides a powerful and flexible alternative by allowing researchers to formulate and evaluate hypotheses that explicitly encode theoretical expectations, such as equality ($A = B$), inequality ($A > B$), or more complex order constraints among parameters. This talk introduces informative hypothesis testing within both Bayesian (e.g., Baln) and other frameworks (e.g., GORIC(A)), offering a comparative perspective on their underlying logic, interpretation, and practical implementation. Particular attention will be given to their similarities and differences, as well as to the advantages and potential limitations of each approach in empirical research.

156. The cost of Pavlovian bias: suboptimal decision-making in human sign-trackers and goal-trackers

Sara Garofalo¹, Luigi Degni¹, Lorenzo Mattioni¹, Claudio Danti¹, Valentina Bernardi¹, Giuseppe di Pellegrino¹

¹ Department of Psychology, University of Bologna

Intervento in simposio · Emotions and motivation

Individuals can differ significantly in how they respond to environmental cues that predict rewards. Two distinct profiles have been identified in Pavlovian learning: sign-trackers, who are drawn to the conditioned stimulus (CS), and goal-trackers, who focus on the reward location. This seemingly irrational behavior is thought to occur because, although the cue similarly predicts the reward for both groups, it acquires a higher incentive value for sign-trackers, potentially leading to maladaptive choices. This study investigates whether sign-trackers, as compared to goal-trackers, exhibit a greater Pavlovian bias in decision-making using a decision-making task with a learned optimal strategy. Results revealed that sign-trackers were susceptible to the Pavlovian bias even when this was altering their decisions in favor of the suboptimal choice. In contrast, goal-trackers maintained the optimal decision-making strategy. Computational modelling revealed that this bias in sign-trackers stems from slower updating of cue values rather than overvaluation of cues. These findings highlight how Pavlovian cues can lead to suboptimal decision-making in sign-trackers and may have implications for understanding vulnerability to disorders such as addiction.

157. Cognitive Reserve and Phonological Short-Term and Working Memory in Mild Cognitive Impairment

Daphne Gasparre¹, Valerio Manippa², Giorgia Francesca Scaramuzzi³, Konstantinos Piftis⁴, Paolo Taurisano³

¹ UDepartment of Translational Biomedicine and Neuroscience (DiBrain), University of Bari Aldo Moro, Bari, Italy

² eCampus University, Como, Department of Theoretical and Applied Sciences

³ Department of Translational Biomedicine and Neuroscience (DiBrain), University of Bari Aldo Moro, Bari, Italy

⁴ Department of General Psychology, University of Padua, Padua, Italy

Mini-talk · Memory

Cognitive Reserve (CR) has been proposed as a key factor modulating cognitive performance resulting in a protective effect across domains. Nonetheless, recent studies have questioned its impact on cognition, reporting weak associations with cognitive measures. Following the recent standardization of Digit Span and Bisyllabic Nonword Span tasks, we investigated whether CR predicts these measures of

Phonological Short-Term and Working Memory, in individuals with Mild Cognitive Impairment (MCI). Forty participants with MCI were selected through a multi-domain neuropsychological assessment. CR was assessed through the Cognitive Reserve Index questionnaire. Bayesian linear regression analyses tested the predictive role of CRIq Total and CRIq subindices (Education, Work, Leisure Time) on the Digit Span and the Nonword Span tasks (forward and backward). Bayesian analysis consistently favoured the null model for Digit Span Forward and Backward, and Nonword Span Forward (BF<1), indicating no evidence of association with CR. A different pattern emerged for Nonword Span Backward. The model including CR showed moderate evidence (BF= 4.37), although the estimated effect size was small and the credible interval marginally included zero. CR did not reliably predict phonological memory performance in MCI. The weak and task-specific predictive effect observed in the most demanding condition could reflect the executive control and manipulation demands. These findings indicate that, although CR would be relevant in cognitive compensation mechanism, its influence may not extend across all cognitive functions and may be overestimated when assumed to broadly affect basic cognitive processes.

158. Judging the Book by The Author. The evaluation of AI-generated poetry in middle school students

Anna Gerna¹, Marco Mariniz, Sebastiano Munini², Fabio Paglieri²

¹ CNR, Istituto di Scienze e Tecnologie della Cognizione/ Sapienza Università di Roma, Dipartimento di Psicologia

² CNR, Istituto di Scienze e Tecnologie della Cognizione

Mini-talk · Language, reading and music

Can ChatGPT write a good poem? Or, more interestingly, does it matter? Nowadays, artificial intelligence systems can produce artworks often indistinguishable from human creations. Yet, a robust finding is the presence of an “AI aversion” bias: once a product is labelled AI-generated, its perceived quality tends to decrease. Poetry represents a particularly stringent test case for this bias, as it is widely considered a domain requiring creativity, intentionality, and depth – qualities often assumed to be uniquely human. Across three experiments, we investigated the perception of AI-generated poetry with 168 Italian middle school students. Stimuli included poems by well-known Italian authors alongside poems generated by ChatGPT emulating each author's style. In Study 1, participants evaluated four poems, randomly labelled as either human- or AI-authored, regardless of their true origin, across 14 dimensions. Study 2 replicated this design with a between-subjects manipulation. Finally, in Study 3 poems were presented without any authorship label and participants were asked to guess whether each poem was human- or AI-generated. Results reveal a striking paradox: participants displayed a consistent bias against AI-labelled poems. However, when considering actual authorship, the pattern reversed: AI-generated poems were rated more favourably than human-authored ones on many dimensions. At the same time, participants' ability to correctly distinguish AI from human poetry remained at chance level. Overall, these findings suggest that AI aversion reflects assumptions about human uniqueness rather than objective differences. Notably, these results replicate and extend those of Porter and Machery (2024), originally obtained with adult Americans, to a younger population and a different language.

159. EEG oscillatory linked to perceived mental workload during ecologically Goal-Oriented Praxis Actions (GOPAs)

Riccardo Gervasi¹, Benedetta Vignati², Laura Angioletti², Luca Mastrogiacomo¹, Domenico Gambino², Angelica Daffinà², Michela Balconi²

¹ Politecnico di Torino, Dipartimento di Ingegneria Gestionale e della Produzione (DIGEP)

² International Research Center for Cognitive Applied Neuroscience (IrcCAN), Università Cattolica del Sacro Cuore, Milano

Poster · Action and movement

Objective and real-time assessment of mental workload remains a critical challenge in industrial contexts, where current approaches mainly rely on subjective questionnaires and do not provide objective, real-time measures. This study investigates the neural correlates of mental workload in realistic assembly tasks, focusing on EEG frequency band activity. Thirty-eight participants performed two assembly tasks with low and high complexity while EEG activity was continuously recorded. Power spectral density was computed for five frequency bands (delta, theta, alpha, beta, and gamma) and normalized relative to a resting baseline. Neural activity was analyzed across four regions of interest (ROI: frontal, fronto-central, temporo-central, and parieto-occipital). Subjective workload was assessed using the NASA Task Load Index (NASA-TLX). Self-report data confirmed higher perceived workload in the high-complexity condition, both for the total score and all subscales. EEG analyses revealed significant main effects of task complexity and ROI as well as a significant interaction effect. Increasing task demands were associated with higher power in theta, alpha, beta, and gamma bands. Region-specific patterns emerged, with delta and theta activity more prominent over frontal areas, and beta and gamma activity stronger in temporo-central and parieto-occipital regions. Notably, significant interaction emerged only for the theta band, showing a selective increase in frontal regions under higher workload conditions. These findings indicate that mental workload during assembly tasks is reflected in distributed, frequency-specific neural dynamics, with frontal theta emerging as a robust and spatially specific indicator, supporting EEG-based monitoring in applied settings.

160. BAYes BEYond Bias: An R Package for Approximate Bayesian Estimation and Validation in Small-N Designs with Rater Bias

Irene Gianceselli¹, Andrea Bosco², Demis Basso¹

¹ Libera Università di Bolzano, Facoltà di Scienze della Formazione

² Università di Bari Aldo Moro, Dip. Formazione, Psicologia, Comunicazione

Mini-talk · Methodology

Reproducible validation remains challenging in small-N repeated-measures designs, especially when outcomes may be affected by rater-specific bias. Developed within the MUR-PROBEN funding scheme (Decree No. 1159/2023; project PROBEN_0000004 – 4Ch4WB, CUP I53C24001340001), *babebi* is an open-source R package for approximate Bayesian inference and Monte Carlo validation in two-time-point, two-rater repeated-measures designs. User-supplied data are standardised into a common long-format structure, and pre-post effects are analysed using difference scores in a linear model with a rater indicator as covariate. Posterior summaries are obtained from a large-sample normal approximation centred at the least-squares estimate with plug-in covariance under a flat

improper prior. Evidence for a non-zero adjusted pre-post effect is summarised using a BIC-based approximation to the Bayes factor. Monte Carlo validation uses design quantities estimated from the observed data and summarises inferential performance in terms of bias, root mean squared error, credible interval coverage, posterior tail probabilities, and mean Bayes factor values. *babebi* is particularly suited to researchers in psychology, education, and allied fields who require a transparent, reproducible, and computationally lightweight framework for small-sample applied research with potential rater bias.

161. TeleStim: Preliminary Findings of a Caregiver-Led Cognitive Stimulation Protocol for Frail Older Adults

Francesco Giaquinto¹, Paola Angelelli², Lorenzo Piccinno³, Elisa Salvatore³, Mariangela Bandello³, Maria Pasanisi³, Giuliana Leccese³, Alessandra Papadia³

¹ Dipartimento di Medicina Sperimentale, Università del Salento, Lecce

² Dipartimento di Medicina Sperimentale, Università del Salento

³ Università del Salento

Intervento in simposio · Life cycle (e.g., development and aging)

Cognitive Stimulation (CS) has the strongest evidence of effectiveness for people with dementia, including when delivered at home by caregivers. However, most established protocols are group-based and in-person, limiting accessibility. This study aimed to develop and preliminarily evaluate TeleStim, an individualized, digitally supported CS protocol targeting the patient–caregiver dyad. Following Medical Research Council guidelines for complex interventions, the study was conducted in three phases: development, modeling, and piloting. Development involved a systematic literature review and creation of TeleStim v1.0. In the modeling phase, expert feedback via focus group informed refinement into TeleStim v2.0, further assessed through a web survey. The piloting phase used a mixed-method, pre–post quasi-randomized controlled design with institutionalized older adults (15vs15). Quantitative outcomes included global cognitive status (MMSE) and caregiver-reported measures; qualitative feedback was collected session-by-session. Quantitative analyses showed no significant pre–post differences in MMSE scores. However, descriptive trends indicated improvement in the intervention group and decline in controls. Qualitative findings revealed good feasibility, acceptability, and perceived benefits in cognitive and relational domains. Notably, evidence suggests that fully remote cognitive interventions may be less effective in dementia; in this study, combining in-person caregiver delivery with remote professional monitoring was perceived as a key strength. TeleStim appears feasible and well-received, addressing access barriers while preserving relational and cognitive stimulation. The hybrid model may overcome limitations of both fully remote and strictly professional-led interventions. Further research should refine TeleStim (v3.0) and test its efficacy in a fully powered randomized controlled trial.

162. Learning temporal patterns: from tapping behavior to cognitive modeling

Dunia Giomo¹, Federico Mancinelli², Gianfranco Fortunato³, Andrea Ravignani¹, Domenica Bueti³

¹ Università degli Studi di Roma La Sapienza, Dipartimento di Neuroscienze Umane, Roma, Italy

² University of Bonn, Transdisciplinary Research Area "Life & Health", Hertz

Chair for Artificial Intelligence and Neuroscience, Bonn, Germany

³ International School for Advanced Studies (SISSA), Trieste, Italy

Intervento in simposio · Space, time and number

Perceptual and sensorimotor events frequently contain multiple temporal regularities that together form temporal patterns. Some features of these patterns, like periodicity and highly predictable relationships between intervals, are specific to rhythmic patterns. These features make the learning of these patterns fast and easy. However, other temporal patterns are neither periodic nor fully predictable, and yet we are able to learn them and leverage their statistical regularities to guide our actions. Which are the processes that support the learning of these non-rhythmic patterns? In this talk I will present two studies in which we tested whether a combination of Bayesian inference and basic learning mechanisms can model how temporal patterns lacking strong rhythmicity and predictability are learned. In the first study, our participants learned to synchronize with a stream of sounds in which a novel, increasingly predictable temporal structure gradually replaced the original one. Our results suggest that synchronization behavior can be explained by a probabilistic form of associative learning, modulated by individual strategies that adapt to changes in predictability across trials. In the second study, we asked participants to reproduce sequences of sounds in which the intervals between sounds followed predefined transition probabilities. Results show that Bayesian inference can model how participants learned these sequences' statistical properties. However, reproduction performances were also influenced by human rhythmic biases. Together, these studies show how humans use domain-general mechanisms for the learning of non-rhythmic, weakly predictable temporal patterns, and how these mechanisms interact with individual learning strategies and biases.

163. Sexual Orientation and Moral Reasoning: An Exploratory Study on Ethical Intuitions and their Affective Correlates

Alice Lia Carmen Giunta¹, Simona Massimino², Amelia Gangemi², Carmelo Mario Vicario²

¹ University of Camerino; Researcher Host: University of Messina, COSPECS Department

² Department of Cognitive sciences, Psychology, education and Cultural studies, University of Messina, Messina, Italy

Intervento in simposio · Reasoning and abstract cognition

Sexual Orientation and Moral Reasoning: An Exploratory Study on Ethical Intuitions and their Affective Correlates This study investigates differences in moral foundations between heterosexual (n = 90) and non-heterosexual (n = 31) cohorts, specifically examining the role of interoceptive awareness, empathy, disgust sensitivity, and alexithymia. Utilizing the Moral Foundations Questionnaire (MFQ-30), the researchers assessed five moral domains: Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. Quantitative analysis via Bonferroni-corrected t-tests revealed that non-heterosexual participants exhibited a significantly lower aggregate MFQ-30 score (M = 87.29 ± 13.96) compared to their heterosexual counterparts (M = 97.74 ± 17.61). This

statistical disparity was primarily predicated upon marked reductions in the Authority/Respect ($p = .005$) and Purity/Sanctity ($p = .003$) domains. Furthermore, the study did not observe significant correlations in the non-heterosexual group; while the heterosexual group showed significant positive correlations between moral reasoning and variables such as disgust sensitivity (DS-R) and empathy (QCAE), these associations were not observed in the non-heterosexual sample. The authors postulate that these variations may emerge from socio-cultural pressures or the Minority Stress Model, suggesting that systemic marginalization from traditional institutions attenuates the salience of conventional normative values. While the results provide preliminary evidence of sexual orientation-based variations in socio-cognitive moral processing, given the modest sample size and gender imbalance, results should be interpreted with caution. These findings highlight the necessity for further longitudinal inquiry into the mechanisms by which minority status may shape the affective and cognitive processes underlying moral judgment.

164. Vocal Markers of Stress in Spontaneous Speech: A Systematic Review and Best Practice Recommendations

Martina Gnerre¹, Federica Biassoni¹

¹ Università Cattolica del Sacro Cuore

Mini-talk · Language, reading and music

Background: Voice analysis offers a non-invasive window into transient psychological states, yet research lacks standardised procedures, clear definitions of vocal markers, and psychometric validation—especially for spontaneous speech, whose inherent variability is often treated as noise. This systematic review synthesises evidence on acoustic markers of stress in spontaneous speech and proposes a discipline-specific protocol to improve measurement validity and comparability. Method: Six databases were searched using a string combining voice analysis terms, spontaneous speech terms, and stress-related terms. Inclusion criteria: empirical studies in English analysing spontaneous or semi-spontaneous speech with acoustic feature extraction; no restrictions on publication date. Exclusion criteria: read or scripted speech only, absence of acoustic measures, pathological samples, and reviews. Data extraction captures sample characteristics, task type, design, construct definition, stress source, acoustic features, preprocessing steps, segmentation units, and statistical methods. Results and Protocol Development: The review reveals significant heterogeneity in measurement choices. Drawing on COSMIN standards and ASHA voice assessment guidelines, we propose a seven-step protocol: (1) define the psychological construct and verify content validity; (2) control communicative context and sociodemographic variables; (3) adopt longitudinal within-subject designs to assess responsiveness; (4) select acoustic features aligned with construct and speech type; (5) ensure high-quality, densely sampled recordings; (6) apply theory-driven segmentation, transcription, and normalisation; (7) use hierarchical models that respect the nested structure of spontaneous speech. Conclusion: Standardising the analytical pipeline will enable cumulative, reproducible findings and support real-world applications in clinical and human-computer interaction settings where robust, online detection of stress states is critical.

165. Exploring the effects of brief mindfulness training on food-related motor impulsivity and its electrophysiological correlates

Irene Gorrino¹, Giulia Mattavelli¹, Anna De Chino¹

¹ ICoN Center, Scuola Universitaria Superiore IUSS, 27100, Pavia, Italy

Mini-talk · Emotions and motivation

Motor impulsivity toward food cues represents a key mechanism underlying eating behaviors, but its sensitivity to mindfulness training remains unclear. This study investigated the effect of brief mindfulness training on inhibitory control in forty-six healthy participants, randomly assigned to mindfulness (10 minutes/day for 4 weeks) or active control group (nature sounds). Three Go/No-Go tasks were administered (neutral; high-calorie Go/low-calorie NoGo; low-calorie Go/high-calorie NoGo) while 64-channel EEG was recorded. Significant effects of session and interactions with group and stimulus type resulted in behavioural analyses. The control group showed faster reaction times at post-training ($p < .05$) and increased Go and NoGo errors ($p < .001$), indicating a shift toward more automatic, impulsive responses. Errors were modulated by stimulus type, with higher rates for low-calorie Go trials ($p < .001$). In contrast, the mindfulness group's performances did not differ across sessions, suggesting preserved inhibitory control. Baseline ERP analyses over fronto-central electrodes revealed larger N2 and P3 amplitudes for NoGo than Go trials, reflecting higher inhibitory demands. Food-related stimuli also modulated these components, with high- and low-calorie Go conditions differing in N2 (≈ 200 – 350 ms) and P3 (≈ 300 – 500 ms) amplitudes, and high-calorie NoGo trials eliciting enhanced P3, indicating greater attentional and inhibitory resource allocation to motivationally salient cues. Findings suggest a speed-accuracy trade-off in the control group, whereas mindfulness preserved a more selective and regulated response profile. This supports that brief mindfulness training may improve cognitive control over food-related impulses, preventing the shift toward faster but more error-prone responses.

166. The impact of cognitive leisure activities in healthy adults: cognitive and neural correlates

Valeria Gosti¹, Erica Berretta¹, Martina Rizzuti¹, Laura Serra¹, Francesca Gelfo¹

¹ Università degli Studi Guglielmo Marconi

Poster · Language, reading and music

Leisure activities are considered as proxy measures of cognitive reserve, namely the brain ability to adapt to changes associated with aging or pathological conditions by optimizing neural efficiency and employing alternative cognitive strategies. Leisure activities are traditionally categorized as physical, social, and cognitive. Cognitive leisure activities, including reading, creative writing, visual arts, and structured games, are increasingly recognized as modulators of cognitive function and contributors to cognitive reserve. This review aims to synthesize evidence in healthy adults on cognitive and neural correlates of three categories of cognitive leisure activities: reading and creative writing, production and enjoyment of visual art, and structured game (e.g., board games, puzzles) playing. From the analysis of the literature arises that reading and creative writing are associated with increased working memory capacity and engage fronto-parieto-temporal networks that underlie verbal creativity, semantic integration, and episodic memory processes. Regarding visual arts, engagement in artistic leisure activities has been associated with enhanced working memory

and non-verbal reasoning performance, in addition to providing neurobiological evidence of activation in emotion regulation circuits, including the medial prefrontal cortex and amygdala. Playing with structured games has been associated with improvements in executive functions, working memory, attention, and processing speed. Overall, such cognitive leisure activities are associated with effects on the cognitive and brain functioning of healthy adults. Frequency and diversity of engagement may contribute to sustaining these effects over time and across multiple cognitive domains in everyday life. Hopefully, further studies will shed light on the specific impact of different cognitive leisure activities.

167. La riorganizzazione multisensoriale della regolazione affettiva in assenza di visione

Marta Guarischi¹, Giulia Cappagli², Guido Catalano³, Sabrina Signorini³, Monica Gori⁴

¹ Istituto Italiano di Tecnologia

² Università degli Studi di Genova, DISFOR

³ Centro di Neuro-Oftalmologia Pediatrica, Fondazione IRCCS Mondino, Pavia

⁴ Istituto Italiano di Tecnologia, U-VIP, Genova

Intervento in simposio · Social cognition

Il tocco sociale rappresenta un meccanismo fondamentale di regolazione fisiologica e costituisce un meccanismo centrale nello sviluppo dell'intersoggettività. Una sfida cruciale consiste nel comprendere come le dinamiche multisensoriali dell'interazione caregiver-bambino si riorganizzino quando uno dei canali sensoriali risulta compromesso. Alla luce di evidenze che mostrano come il tocco materno e quello di una persona non familiare evocano pattern autonomici distinti, il presente contributo indaga se la privazione visiva modifichi tale modulazione caregiver-specifica durante l'infanzia. Diciannove bambini (10 con disabilità visiva, 9 a sviluppo tipico; 8–13 mesi) hanno partecipato a un paradigma adattato da studi precedenti. I bambini hanno ricevuto una stimolazione tattile affettiva (0,3 cm/s) sulla tibia destra, mentre la persona che somministrava la stimolazione rimaneva nascosta. Il genitore o uno sperimentatore non familiare sedevano, uno alla volta, di fronte al bambino. L'indice di frequenza cardiaca (HR) è stato calcolato come variazione relativa tra la fase di stimolazione e la baseline. I risultati non hanno evidenziato effetti principali significativi del Gruppo o dell'Identità del Caregiver, sebbene sia emersa un'interazione marginale. A livello descrittivo, i bambini con disabilità visiva tendevano a mostrare indici di HR più bassi quando venivano toccati da uno sconosciuto rispetto alla madre, mentre nei bambini a sviluppo tipico si osservava la tendenza opposta. Nel complesso, i risultati suggeriscono che la privazione visiva riorganizzi la sintonizzazione fisiologica caregiver-specifica, indicando un ruolo cruciale del canale visivo nello sviluppo affettivo.

168. Quando il tocco diventa linguaggio: il tocco affettivo come regolatore embodied della relazione in condizioni di ridotta accessibilità sensoriale e sociale

Marta Guarischi¹

¹ Istituto Italiano di Tecnologia

Simposio · Social cognition

Il tocco affettivo, tipicamente veicolato attraverso stimolazioni tattili lente e delicate che attivano in modo ottimale le afferenze C tattili (CT), svolge un ruolo fondamentale nello sviluppo del Sé corporeo, nella regolazione emotiva e nel legame sociale.

Sebbene le sue funzioni siano state ampiamente studiate, resta ancora poco esplorato come il tocco affettivo contribuisca alla relazione quando le modalità di accesso percettivo e corporeo all'altro risultano profondamente riorganizzate. Il simposio riunisce quattro contributi che esaminano il tocco affettivo come meccanismo regolativo embodied in condizioni evolutive e cliniche caratterizzate da differenti configurazioni sensoriali e corporee. Il primo contributo affronta il tocco affettivo nei bambini con disabilità visiva, analizzando l'alterazione della regolazione fisiologica in assenza di informazioni visive. Il secondo contributo si concentra sullo sviluppo tipico, esaminando il ruolo del tocco affettivo in bambini di 13 mesi esposti a una condizione di esclusione sociale e i suoi potenziali effetti sulla regolazione socio emotiva. Il terzo contributo esplora il tocco sociale in individui con disturbo dello spettro autistico, focalizzandosi sulla rappresentazione dello spazio peripersonale e combinando realtà virtuale immersiva e misure psicofisiologiche. Il quarto contributo analizza infine il tocco affettivo in pazienti con fibromialgia, discutendone il ruolo nella modulazione della percezione del dolore cronico. Nel loro insieme, questi studi mostrano come il tocco affettivo costituisca un meccanismo embodied di regolazione relazionale, il cui significato emerge dall'interazione tra corpo, contesto e relazione, offrendo una cornice unificata per comprendere il ruolo del tocco sociale nella costruzione dell'intersoggettività in condizioni di ridotta accessibilità sensoriale e sociale.

169. Abilità numerica nelle piante

Silvia Guerra¹, Koleen McCrink², Umberto Castiello¹

¹ Dipartimento di Psicologia Generale (DPG), Università degli Studi di Padova, Padova, Italia

² Department of Psychology, Barnard College, Columbia University, New York, United States of America

Mini-talk · Space, time and number

La capacità di discriminare le quantità rappresenta un tratto cognitivo adattivo e innato negli animali. In questo studio abbiamo indagato se tale abilità sia presente anche nelle piante e, in tal caso, quanto risulti sofisticata rispetto a quella osservata nelle diverse specie animali. A tal fine, il movimento delle piante di pisello (*Pisum sativum* L.) è stato analizzato mediante l'analisi cinematica tridimensionale (3D) del movimento, in presenza di distribuzioni di supporti uguali (i.e., 2 vs. 2) o disuguali (i.e., 1 vs. 3). I risultati mostrano che le piante di pisello sono in grado di percepire la distribuzione dei supporti e di modulare di conseguenza il proprio comportamento motorio. Tali evidenze suggeriscono che le piante presentino abilità di discriminazione delle quantità, potenzialmente coinvolte in processi decisionali adattivi in risposta a un ambiente in continuo cambiamento.

170. Early brain signals, lasting insights: advancing EEG to decode social neurodevelopment

Anna Gui¹, Silvia Rigato², Livio Provenzi³, Ottavia Ollari⁴

¹ Università degli Studi di Roma Tor Vergata

² University of Essex, Department of Psychology

³ Università di Pavia, Dipartimento di Scienze del Sistema Nervoso e del Comportamento

⁴ King's College London, Department of Forensic and Neurodevelopmental Science

Simposio · Social cognition

Understanding how individual differences in social behaviour emerge in infancy and early childhood requires experimental

paradigms that are both developmentally sensitive and psychometrically robust. This symposium showcases four EEG studies that illustrate how rigorous designs, reliable neural measures, and advanced neurotechnology can push forward the study of neurodevelopment in social interactions. Silvia Rigato (University of Essex) opens by combining well-validated ERP paradigms with behavioural assessments in 5- to 7-month-olds, linking neural responses to mother-versus-stranger stimuli with individual differences in infant temperament and affectivity, demonstrating the value of multi-method triangulation. Anna Gui (University of Rome Tor Vergata) then presents a registered-report study applying Neuroadaptive Bayesian Optimisation, an AI-enhanced, real-time EEG approach, to 6- to 9-month-olds, enabling individualized identification of the parental gaze and emotional cues that maximally engage each infant's Nc response and capturing heterogeneity typically obscured by group-level designs. Livio Provenzi (University of Pavia) presents findings from dual-EEG hyperscanning to mother-infant dyads with 8-to-10-month-old infants during the Face-to-Face Still-Face procedure; phase-locking analyses reveal distinct patterns of inter-neural coupling tied to specific phases of the interactive perturbation. Finally, Ottavia Ollari (King's College London) closes with data from a harmonised multi-site tactile paired-pulse inhibition protocol in 3-to-6-year-old autistic and non-autistic children to isolate autism-related differences in ERP and oscillatory measures. At the youngest ages, where task compliance is constrained and developmental brain trajectories are not yet well characterised, we argue for pushing the boundaries of neurotechnology and adopting rigorous experimental designs to deliver reliable, individually meaningful insights into early social neurodevelopment.

171. Individual differences in infants' neural sensitivity to parents' communicative social cues: real-time EEG for a neuroadaptive approach

Anna Gui¹, Antonia Jordan-Barros², Francesca Penza², Marian Aguiló Mayans², Rianne Haartsen², Robert Leech³, Emily Jones²

¹ Università degli Studi di Roma Tor Vergata, Dipartimento di Medicina dei Sistemi

² Birkbeck University of London, Centre for Brain and Cognitive Development

³ King's College London, Institute of Psychiatry, Psychology & Neuroscience

Intervento in simposio · Social cognition

Infants' motivation to engage with the social world depends on the interplay between individual brain characteristics and experience with social cues, such as a parent's emotional expression or eye gaze direction. Previous group-level studies have limited insight into individual variability in early social brain development. Here, we applied a novel Artificial Intelligence-enhanced neuroimaging approach, Neuroadaptive Bayesian Optimisation (NBO), to infant electroencephalography (EEG) to investigate how infants' neural signals encode social cues at the individual level. In a registered report, EEG data were collected from 74 6–9 month-olds while viewing images of their parent's face displaying different combinations of gaze/head directions and emotional expressions. For 63 infants, real-time EEG analyses provided reliable Negative Central (Nc) event-related potentials. The Nc mean amplitude was used by a Bayesian Optimisation algorithm to identify the combination of parental gaze/head direction and emotional expression eliciting maximal neural responses for each infant ("optimum"). The NBO approach supported the hypothesis that

infants' brains are maximally engaged by angry faces with direct gaze (Bayes Factor = 3.24). A positive, non-significant trend indicated that infants whose optimum had a smaller Euclidean distance from the direct-gaze happy face condition exhibited lower negative affectivity ($\beta = 0.56$, $SE = 0.29$, $p = 0.063$). Further pre-registered analyses found no evidence linking infants' Nc responses to parental affectivity. Overall, these findings reveal substantial heterogeneity in infants' attentional responses to social signals and highlight the potential of NBO to capture individual neurodevelopmental trajectories, bridging neural responses, temperament, and early caregiving context.

172. Informant- and Self-Reported Everyday Cognition in the earliest stages of neurodegenerative disorders: preliminary evidence from the Italian ECog

Sabrina Guzzetti¹, Laura Veronelli², Daniele Romano³, Giulia Gilardone¹, Francesca Pesce¹, Leonardo Pantoni⁴

¹ Casa di Cura Igea, Department of Neurorehabilitation Sciences, Milan, Italy

² Casa di Cura Igea, Department of Neurorehabilitation Sciences, Milan, Italy, Department of Psychology, University of Milano-Bicocca, Milan, Italy

³ Department of Psychology, University of Milano-Bicocca, Milan, Italy

⁴ Casa di Cura Igea, Department of Neurorehabilitation Sciences, Milan, Italy, Department of Biomedical and Clinical Science, University of Milan, Milan, Italy

Intervento in simposio · Life cycle (e.g., development and aging)

The assessment of subtle functional difficulties may contribute to the early detection of neurodegenerative disorders. The Everyday Cognition questionnaire (ECog) is designed to quantify changes in the ability to perform everyday activities, organized into subscales according to the cognitive domain involved [1]. Both the informant-based (ECog-I) and self-report (ECog-S) versions have been adapted into Italian within the ongoing ITA-VALI-DEM project. The present study aims to evaluate the association between ECog-I and ECog-S scores and objective cognitive performance in healthy older adults (HOA) and in Subjective Cognitive Decline (SCD) and Mild Cognitive Impairment (MCI) individuals, as well as the tool's discriminative ability between groups. Data from 240 HOA and 30 SCD and MCI individuals have been collected. The former underwent neuropsychological screening, while patients were administered a comprehensive neuropsychological battery. All participants completed the ECog. Correlation analyses were conducted between ECog-I and ECog-S total and subscale scores and psychometric test performance, with groups analysed separately. Logistic regressions were also performed to assess the discriminative power of the ECog in distinguishing HOA from clinical conditions. Results showed significant correlations between ECog scores and psychometric measures, with different patterns of association for ECog-I and ECog-S across cognitive domains and groups. Moreover, the instrument seems capable of distinguishing HOA from clinical conditions, although these findings warrant caution at this stage due to the reduced sample size of clinical cases. These results suggest that integrating informant-based and self-report measures may provide complementary and clinically relevant information for the early identification of neurodegenerative disorders. [1] Farias, S. T., Weakley, A., Harvey, D., Chandler, J., Huss, O., & Mungas, D. (2021). The measurement of everyday cognition (ECog): revisions and updates. *Alzheimer Disease & Associated Disorders*, 35(3), 258-264

I

173. Simulazioni sensorimotorie e ragionamento deduttivo spaziale

Francesco Iani¹, Ivan Nabil Ras¹, Walter Schaecken², Monica Bucciarelli¹

¹ Università degli Studi di Torino, Dipartimento di Psicologia

² KU Leuven, Leuven, Belgium, Faculty of Psychology and Educational Sciences

Intervento in simposio · Action and movement

Il costrutto di “simulazione sensorimotoria” (la simulazione di un’informazione che evoca un’esperienza motoria e percettiva in assenza di uno stimolo esterno reale) ha assunto nelle ultime decadi un ruolo centrale in diversi ambiti di ricerca, a partire dall’osservazione dell’azione per giungere alla comprensione del linguaggio (see e.g., Stockner et al., 2025). Un più recente filone di studi ha cercato di evidenziarne il ruolo all’interno del ragionamento deduttivo spaziale, un dominio classicamente considerato legato alla cognizione di “ordine superiore”. Alcuni studi di neuroimaging (Knauff et al., 2003) e comportamentali (Iani et al., 2023) evidenziano infatti il potenziale coinvolgimento delle risorse motorie nel ragionamento deduttivo spaziale. In due nuovi studi, abbiamo indagato il ruolo della simulazione motoria evocata dall’osservazione di un’azione nel ragionamento spaziale. I partecipanti hanno osservato un video che mostrava un attore eseguire un’azione specifica, per poi risolvere un compito di ragionamento deduttivo spaziale. Abbiamo osservato come il ragionamento spaziale possa essere influenzato sia dalla velocità di un’azione osservata (Esperimento 1, 80 partecipanti) sia dallo sforzo fisico associato a un’azione osservata (Esperimento 2, 190 partecipanti). Nello specifico, i risultati hanno mostrato che i partecipanti traevano conclusioni corrette più rapidamente dopo aver osservato un’azione veloce rispetto a un’azione più lenta, e dopo aver osservato un’azione che coinvolgeva oggetti leggeri (condizione priva di sforzo motorio) rispetto a oggetti più pesanti (condizione con sforzo motorio). Non sono stati riscontrati effetti sull’accuratezza. Questi risultati evidenziano il ruolo delle informazioni sensorimotorie nella costruzione dei modelli spaziali necessari per ragionare in modo deduttivo.

174. Biased beliefs: How individual differences and affective-cognitive mechanisms shape information interpretation and decision-making

Paola Iannello¹

¹ Department of Psychology, Università Cattolica del Sacro Cuore, Milano

Simposio · Social cognition

This symposium brings together complementary perspectives to examine how biased beliefs emerge from the interplay between individual differences and affective-cognitive mechanisms. Across four contributions, we highlight the construction of information processing underlying the belief system in different reasoning processes (e.g., decision making, forensic judgement, misinformation susceptibility and conspiracy theories). First, experimental evidence shows that judgments in socially and morally ambiguous contexts are shaped by the convergence of cognitive biases and affective influences, including incidental emotions and dispositional traits. Second, the construct of Socio-Cognitive Polarization (SCP) is introduced as a stable disposition characterized by rigid, dichotomous thinking across cognitive, social, and ideological domains., which biases belief evaluation, increases

susceptibility to fake news, and promotes maladaptive decision-making. Third, advances in measurement are presented through the Italian adaptation of the Misinformation Susceptibility Test (MIST-ita), which assesses individual differences in truth discernment by incorporating confidence in one’s judgments as a constitutive dimension of misinformation susceptibility. Finally, a cross-national investigation of conspiracy mentality reveals how cognitive, emotional, and sociopolitical factors interact to shape generalized conspiratorial thinking across different cultural contexts. Together, these contributions converge on a framework in which biased beliefs arise from dynamic interactions between cognitive processing styles, emotional states, and broader ideological perspectives. By integrating different approaches, this symposium advances our understanding of how individuals interpret information and make decisions in increasingly complex and polarized informational environments.

175. Cosa ostacola la scelta verso un’alimentazione vegana? Un’analisi delle barriere percepite

Paola Iannello¹, Carlotta Bolondi², Alessandra Rondi³, Valentina Taglietti⁴, Matteo Robba⁵, Angela Sorgente⁶

¹ Department of Psychology, Università Cattolica di Milano

² Department of Psychology, Università Cattolica, Milano

³ Department of Psychology, Università Cattolica, Milano

⁴ Essere Animali ETS

⁵ Area of Economic and Business Education, University of Mannheim

⁶ Department of Psychology, Università Cattolica, Milano

Poster · Health, sport and wellbeing

Negli ultimi anni si è osservato un crescente interesse verso regimi alimentari plant-based; tuttavia, nonostante i molteplici benefici associati, l’adozione di uno stile alimentare vegetale rimane ancora limitata. La letteratura si è finora prevalentemente focalizzata sulle motivazioni che guidano questa scelta alimentare, mentre risultano poco indagate le barriere che ne ostacolano l’adozione (Rickerby & Green, 2024). Il presente studio si propone di identificare le principali barriere percepite verso l’alimentazione vegana (es. economiche, sociali, emotive) e di esaminare la loro distribuzione nella popolazione italiana, verificando l’eventuale esistenza di pattern e combinazioni differenti. A tal fine, è stata sviluppata una scala composta inizialmente da 14 item, costruiti sulla base delle barriere identificate in letteratura. La misura è stata somministrata online a un campione di italiani (N=4083; 84.5% femmine; range età=18-65+ anni; Metà=47,6; DSetà=14.1). I dati raccolti sono stati analizzati con analisi fattoriale e Latent Profile Analysis (LPA). L’analisi fattoriale ha confermato l’adeguatezza di nove item che misurano rispettivamente quattro tipi di barriere: pratiche (es. difficoltà nel reperire alimenti vegani), informative (es. mancanza di conoscenze per bilanciare adeguatamente la dieta), economiche (es. costo elevato del cibo vegano) e barriere legate all’auto-controllo (es. difficoltà nel resistere a cibi non vegani). Queste quattro dimensioni sono poi state utilizzate come indicatori della LPA, che ha permesso di identificare sette distinti profili, caratterizzati da diverse combinazioni di barriere percepite. Nel complesso, i risultati sottolineano la necessità di sviluppare interventi mirati e targettizzati a barriere specifiche, al fine di promuovere in modo efficace l’adozione di un’alimentazione vegetale. Keywords: Alimentazione vegana, Barriere, Latent Profile Analysis

176. Effetto Michelangelo

Marco Iosa¹, Claudia Salera¹

¹ Università Sapienza di Roma, Dipartimento di Psicologia

Intervento in simposio · Health, sport and wellbeing

L'OMS ha rilasciato nel 2019 un documento basato su un'ampia revisione della letteratura scientifica condotta su oltre tremila studi che dimostra l'efficacia dell'arte terapia declinata in diversi aspetti e focalizzata nel recupero di diverse tipologie di deficit. Tuttavia i principi neuroestetici alla base di questa efficacia sono poco chiari e spesso ipotizzati ma non dimostrati. Uno di questi potrebbe essere l'Effetto Michelangelo, recentemente scoperto, ovvero una minore percezione della fatica e una maggiore fluidità e precisione dei movimenti nel fare esercizi in cui sono presenti stimoli artistici al posto di stimoli o esercizi della neuroriabilitazione convenzionale. Questo si traduce anche in una maggiore partecipazione attiva del paziente con un'efficacia del trattamento ripetuto su più sedute nel recuperare funzioni motorie e cognitive. Ciò è stato dimostrato in recenti studi di pittura e scultura effettuati in realtà virtuale per dare al paziente neurologico l'illusione di riuscire a riprodurre capolavori della storia dell'arte. L'uso della realtà virtuale ha dunque consentito di disegnare un protocollo terapeutico che metteva insieme due aspetti solitamente distinti negli altri studi di arte terapia: la creazione dell'opera con la fruizione di un'opera già esistente e ben riconoscibile. Questi risultati sono in linea con l'emergente Cultural Wellbeing, ovvero il benessere che può derivare dalla cultura e dall'arte. Portando opere d'arte (o loro riproduzioni), anche nella forma della poesia, all'interno dell'ospedale, si migliora il benessere del paziente e si può contribuire all'efficacia delle terapie.

L

177. Caregiving Across the Life Cycle: Stress, Cognition, Quality of Life and Technological Support for Caregivers of People with Cognitive and Complex Disabilities

Stefania La Rocca¹

¹ Department of Psychology, Catholic Sacred Heart University, Milan

Simposio · Life cycle (e.g., development and aging)

Caregiving represents a developmental context spanning the life cycle, characterized by the coexistence of vulnerabilities and resources. While the literature has extensively documented the burden associated with caring for people with disability and cognitive decline, less attention has been paid to caregivers' own psychological needs in terms of cognition and quality of life. This symposium brings together four contributions exploring, through complementary methodological approaches, the psychophysiological, neuropsychological, psychometric, and interventional dimensions of caregiving in contexts of disability and cognitive decline. The first contribution examines cognitive reserve and self-perception of aging as moderators of stress effects on cognitive functioning in spouses of people with dementia, integrating neuropsychological measures, self-report, and salivary indicators. The second analyzes caregiver accuracy as an informant in cognitive decline assessment through the eCog, exploring the caregiver's role in detecting functional changes in individuals with subjective cognitive decline and mild cognitive impairment. The third explores family caregivers' experience of life goals, meaning, burden, quality of life, and resilience in relation to children's age and disability

severity in a sample of parents of children and adolescents with complex disabilities. The fourth presents findings from a systematic review on the psychosocial effects of LLM-based conversational systems supporting older adults and caregivers at home, comparing interventions centered on the older adult versus those centered on the caregiver. The symposium proposes an integrated view of caregiving as a dynamic process requiring sensitive assessment tools, personalized interventions and research that restores to caregivers the centrality they deserve as subjects across the life cycle.

178. Individual differences in susceptibility to misinformation: an experimental study

Giuseppe La Selva¹, Lucia Monacis¹, Manuela Longo¹

¹ Università degli Studi di Foggia, Dipartimento di Studi Umanistici

Mini-talk · Social cognition

Susceptibility to misinformation on social media is influenced by individual and content-related factors. Growing concern about its spread has led researchers to explore additional psychological characteristics associated with inadvertent sharing of false content. Among these, Fear of Missing Out (FoMO)—the anxiety that others may be having rewarding experiences without oneself—has emerged as a potential factor, particularly linked to problematic social media use. The present study investigates the association between FoMO and belief in and engagement with fake news. To address this, an online within-subject experiment was conducted in which 130 participants completed a task requiring them to read 20 news stories (10 real and 10 false, presented in random order) formatted as social media posts, evaluate their credibility and indicate their intention to click, like, comment and share these posts. In addition, participants' level of Fear of Missing Out was assessed using the Online Fear of Missing Out Inventory. Preliminary results indicate that participants with higher levels of FoMO showed a greater tendency to perceive fake news posts as more credible. Furthermore, higher levels of FoMO were also associated with greater engagement with news posts, regardless of content type (real or false). Finally, it was found that the higher the levels of FoMO, the greater one's intentions to click and share false news. These findings support the idea that individuals experiencing high levels of anxiety resulting from being out of touch with friends and social groups are more susceptible to false information posted on social media.

179. Accessibilità e caratteristiche del verde urbano e benessere nei lavoratori pubblici: evidenze preliminari da un approccio multidimensionale

Luca Laezza¹, Maura Loi², Silvia Pogliaghi³, Margherita Pasini⁴

¹ Università di Verona

² Dipartimento di Neuroscienze, Biomedicina e Movimento, Università di Verona

³ Dipartimento di Medicina Clinica e Sperimentale, Università di Foggia

⁴ Dipartimento di Scienze Umane, Università di Verona

Mini-talk · Health, sport and wellbeing

L'esposizione alla natura è associata a benefici per la salute e recenti evidenze suggeriscono che la presenza di spazi verdi urbani promuove livelli più elevati di attività fisica, mentre gli effetti sul benessere psicologico e il ruolo della rigeneratività percepita appaiono meno chiari (Helbich et al., 2025). Il presente studio esplora la relazione tra verde urbano e benessere psicofisico in un campione di lavoratori pubblici. Dati

preliminari su 35 partecipanti includono indici di salute psicofisica (BMI, VO2max, attività fisica, stress, qualità del sonno, qualità della vita) e ambientali (estensione aree verdi, distanza dal luogo di residenza, visibilità, rigeneratività percepita). Sono state condotte analisi descrittive, di correlazione e confronti tra gruppi. Una minore distanza percepita (< 5 minuti) tende ad essere associata a maggiore attività fisica, a una maggiore salute cardiorespiratoria (VO2max: 36.5 vs 34.2 ml/min/kg) e a una migliore qualità del sonno (PSQI: 2.95 vs 4.23). I partecipanti che riportano esperienza visiva diretta del verde mostrano livelli inferiori di stress (PSS: 12.7 vs 18.7), una migliore qualità del sonno (PSQI: 2.9 vs 4.6) e maggiore qualità della vita (WHO-5: 16.0 vs 12.5). L'estensione delle aree verdi si associa ad un BMI più basso ($r = -.30$, $p = .083$) e VO2max più elevato. La rigeneratività percepita tende ad aumentare al crescere della della prossimità e dell'estensione del verde. Nel complesso, i risultati suggeriscono che la presenza del verde urbano è associata al benessere psicofisico. Il completamento della raccolta dati permetterà di testare l'efficacia della regola 3-30-300 (Konijnendijk, 2023).

180. Experimental Manipulation of Inner Dialogue: behavioral consequences in healthy participants

Vanda Lamberti¹, Francesco Caputo², Deborah Ferrante³, Vittoria Zaccari⁴, Micaela Di Consiglio⁵, Alessandro Couyumdjian⁵, Francesco Mancini⁶, Maria Ciccarelli², Francesca D'Olimpio²

¹ Università della Campania Luigi Vanvitelli, Dipartimento di Psicologia

² Università della Campania Luigi Vanvitelli, Dipartimento di Psicologia

³ Università di Trento, Dipartimento di Psicologia e Scienze Cognitive (DiPSCo)

⁴ Università Guglielmo Marconi, Dipartimento di Scienze Umane

⁵ Sapienza Università di Roma, Dipartimento di Psicologia

⁶ Associazione di Psicologia Cognitiva

Poster · Attention, perception and consciousness

Under specific conditions, such as in patients with Obsessive-Compulsive (OC) Disorder, internal dialogue can adopt an 'agentic' form, wherein internal voices exert perceived authority through moralized and blaming content. This study investigates whether induced Self-Criticism (SC) influences inner dialogue in healthy participants and explores how shame and guilt, induced by SC, turn into specific behavioral tendencies. 130 young adults ($M = 24.4$; $SD = 2.53$) were assessed using the Obsessive-Compulsive Inventory-Revised (OCI-R). Experimental procedures included a Self-Criticism (SC) induction followed by a 'Safe Place' intervention, aimed both to facilitate emotional and cognitive recovery and as a comparative regulatory condition. The protocol further involved an Approach-Avoidance Task (AAT) with OCD-related stimuli, alongside self-report measures assessing shame, moral guilt, and specific features of the inner critic. In high OCI-R scores participants, SC induction increases the perception of the "inner critic" as a hostile, authoritative agent ($F(1, 98) = 14.19$, $p < .001$), Shame ($F(6, 372) = 21.928$, $p < .001$) and Moral Guilt ($F(6, 372) = 18.449$, $p < .001$). Furthermore, SC modulated Reaction Times (RTs) biases toward OCD-related stimuli in the AAT, whereas the "Safe Place" intervention successfully shifted these biases from negative to positive ($F(1, 124) = 7.666$, $p < .01$). The findings suggest that the agentic nature of inner dialogue plays a crucial role in maintaining OC-like behaviors by undermining emotional regulation and thoughts. Furthermore, the observed AAT bias shifts indicate that brief clinical interventions could modify implicit cognitive-behavioral tendencies in OCD.

181. Tecnologie digitali, benessere e risorse cognitive nella popolazione anziana: uno studio correlazionale

Antonella Langiu¹, Maria Grazia Diana², Maria Pietronilla Penna², Maria Lidia Mascia³

¹ University of Cagliari

² Università di Cagliari

³ Università di Sassari

Poster · Life cycle (e.g., development and aging)

Il benessere rappresenta una condizione multidimensionale che comprende uno stato globale di salute fisica e mentale, associato a una percezione positiva della propria qualità di vita. Nell'attuale contesto socio-demografico emergono due fenomeni rilevanti: il rapido sviluppo tecnologico e il progressivo invecchiamento della popolazione. In tale scenario, il benessere degli anziani assume un ruolo centrale, soprattutto in relazione all'impatto che l'utilizzo delle tecnologie può avere sulla sua percezione. Lo studio ha coinvolto 100 partecipanti cognitivamente sani (età media = 75 anni; $DS = 6,4$), ai quali sono state somministrate diverse scale self-report: Autoefficacia, Cognitive Reserve Index (CRIq), BEN-SSC, Cognitive Flexibility Inventory (CFI) e Resilience Scale (RS-14). Le analisi correlazionali hanno evidenziato che la resilienza è positivamente associata alla flessibilità cognitiva e al benessere, sia a livello globale sia nei singoli fattori (soddisfazione personale, strategie di coping e competenze emotive). Analogamente, la flessibilità cognitiva risulta positivamente correlata con il benessere. Interessante è la correlazione negativa tra soddisfazione personale e autoefficacia nell'uso del digitale. Nel complesso, i risultati supportano l'esistenza di relazioni significative tra uso delle tecnologie, benessere psicologico e risorse cognitive nella popolazione anziana.

182. Conceptual processing in bicultural bilinguals: effects of cultural congruency in a visual world eye-tracking study

Beatrice Lanzini¹, Simone Sulpizio¹, Francesca Foppolo¹

¹ University of Milano-Bicocca, Department of Psychology

Poster · Language, reading and music

How bicultural bilinguals access conceptual information across languages and cultural contexts remains debated. The Bilingual Dual Coding Theory (Paivio & Desrochers, 1980) predicts that conceptual representations associated with translation equivalents vary depending on the context of acquisition: when languages are acquired in different cultural environments, translation equivalents may evoke distinct representations shaped by different perceptually grounded experiences; when acquired in the same environment, translation pairs should evoke one shared representation. Testing this hypothesis, we administered a visual world paradigm to two groups of Italian-English bilinguals: Bicultural Bilinguals (residing in the UK) and Monocultural Bilinguals (residing in Italy). Both groups completed two randomised sessions (Italian and English). They viewed a four-picture frame (target, competitor, two distractors) while hearing instructions indicating which picture to click. 32 pairs of prevalidated target images depicted objects with typically Italian or typically British perceptual features. Trials were culturally congruent when the language of the auditory instructions matched the cultural connotation of the target image, and incongruent otherwise. Eye-movement data were recorded online using Labvanced. Results partially support the hypothesis. Monocultural Bilinguals ($n=56$) show greater target

fixation for typically Italian images in both sessions, though the effect is small and late-emerging, likely attenuated by a salience effect: typically British images attract disproportionate fixations before target onset, suggesting unfamiliarity rather than linguistic processing. Bicultural Bilinguals ($n=31$) show no consistent congruency effect; instead, their data suggest competition between co-activated representations rather than a binary language-to-representation mapping, consistent with dense L1–L2 interconnections at both lexical and semantic levels.

183. The influence of personality and obsessive–compulsive traits on the relationship between rhythmic complexity and musical pleasure

Carlotta Lega¹, Giulio Costantini², Behic Bugra Biber¹, Maaïke Weevers³, Giorgio Lazzari¹, Eleonora Fullone¹, Laura Ferreri¹

¹ *Dipartimento di Scienze del Sistema Nervoso e del Comportamento, Università di Pavia*

² *Dipartimento di Psicologia, Università degli Studi di Milano-Bicocca*

³ *Department of Science, University of Amsterdam*

Mini-talk · Language, reading and music

In music perception, the relationship between rhythmic complexity and pleasure is often described by an inverted-U function, whereby intermediate complexity is most pleasurable and elicits the strongest desire to move. While this pattern is robust, it remains unclear whether it reflects a general property of perceptual systems or is modulated by individual differences. In the present study, 261 participants rated naturalistic musical stimuli varying in rhythmic complexity on pleasure and wanting to move. Participants also completed the Obsessive–Beliefs Questionnaire (OBQ) and the HEXACO adjective scale. Consistent with previous literature, we observed an inverted-U relationship between rhythmic complexity and pleasure. Crucially, this relationship was significantly modulated by obsessive–compulsive traits: higher levels of these traits were associated with a leftward shift of the function, indicating a preference for lower rhythmic complexity and greater predictability. We also observed effects of personality traits: in particular, Openness to Experience was associated with higher overall reward responses and a relative preference for more complex rhythmic stimuli. Together, these findings suggest that individual differences systematically shape how rhythmic complexity is experienced as pleasurable. Obsessive–compulsive traits and Openness to Experience appear to bias preferences in opposite directions, toward more predictable or more complex stimuli, respectively. Overall, the results indicate that the mapping between rhythmic complexity and musical pleasure is not fixed but systematically shaped by stable personality dimensions that influence how auditory complexity is translated into pleasure.

184. Evaluating and promoting territorial preparedness to telemedical services: a pilot study on end-user acceptability of telemedicine guided by the Unified Theory of Acceptance and Use of Technology Framework (UTAUT)

Marco Lezcano¹, Margherita Pasini¹, Maria Gabriella Landuzzi¹

¹ *Dipartimento di Scienze Umane, Università degli Studi di Verona*

Mini-talk · Health, sport and wellbeing

Healthcare innovation is advancing rapidly through technological advances and AI integration. Since the COVID-19

pandemic, telemedicine has become a common modality for delivering healthcare, social health, and assistance services remotely. However, successful adoption depends on context-specific evaluations that take end-users' perceptions and interests into account. This pilot study aimed to develop and validate a context-sensitive measurement tool, grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT) and its extensions, to assess telemedicine acceptability before direct experience with such services. The model examined constructs from the original UTAUT framework (i.e., performance expectancy, effort expectancy, and social influence) together with additional dimensions, including compatibility, personal innovativeness, and acceptability. A cross-sectional survey was completed by 429 participants from urban, peripheral, and rural areas of northern Italy with no prior telemedicine experience. Confirmatory factor analysis demonstrated satisfactory convergent and discriminant validity, internal consistency, and full measurement invariance across gender and residential context. Structural equation modeling showed excellent fit ($TLI = .98$; $RMSEA = .038$). Performance expectancy ($\beta = 0.475$), compatibility ($\beta = 0.355$), and social influence ($\beta = 0.258$) significantly predicted telemedicine acceptability. Findings support a community-centered approach to understanding service acceptance and designing targeted initiatives to foster trust and adoption.

185. Beyond the Replication Crisis: A Blockchain Framework for Open Science Implemented in Shiny Applications

Gabriele Limonta¹, Giulio Costantini¹

¹ *Università degli Studi di Milano-Bicocca, Dipartimento di Psicologia*

Mini-talk · Methodology

The replication crisis in Psychology has raised serious concerns about the credibility of scientific knowledge. Yet, it can also be seen as a “Eucatastrophe”: a disruptive event that revealed the need for greater rigour, transparency, and accountability. One influential response has been the Open Science (OS) movement, reflected in Nosek's (2019) Strategy for Culture Change, in which openness becomes possible, easy, normative, rewarding, and ultimately required. Even so, OS practices are still adopted unevenly across the research lifecycle. To address these limitations, we propose a blockchain-based framework that builds on existing OS solutions, such as the Open Science Framework and Open Badges. We demonstrate its core components, which are now implemented in three R Shiny applications. The first (OpenStamp) allows researchers upload datasets, codes, and preregistrations to the InterPlanetary File System (IPFS), which are then immutably time-stamped on the blockchain, ensuring transparent provenance and auditable integrity verification. The second one (MeritCert) helps reviewers verify the availability and trustworthiness of these materials while allocating incentives for research openness through Merit Tokens and Non-Fungible Token certifications of Open Practices. The third one (OpenExplorer) allows anyone to inspect the Merit Score and Open NFT Badges associated with any wallet and its linked research packages, retrieved directly through blockchain and IPFS queries Together, these applications make Open Science practices verifiable and rewarding, strengthening incentives and transparency while providing a concrete response to inconsistent adoption in the current research ecosystem.

186. Peripersonal space responses to social touch in Autistic adults: an Immersive Virtual Reality study

Matteo P. Lisi¹, Anna Giometti², Martina Fusaro¹, Ilaria Minio Paluello³, Salvatore Maria Aglioti¹

¹ Sapienza Università di Roma, Dipartimento di Psicologia

² Università di Camerino, School of Advanced Studies

³ Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie della Cognizione

Intervento in simposio · Social cognition

Approaching threatening stimuli can increase alertness and elicit protective responses as they enter peripersonal space (PPS). Many autistic adults report avoiding touch from other people, yet it remains unclear whether social touch is anticipated and processed as threatening in those with high social touch avoidance. In collaboration with autistic co-researchers, we conducted a participatory immersive virtual reality study comparing behavioural, physiological, and subjective responses to approaching social and non-social stimuli. Autistic adults with low and high social touch avoidance, indexed by the Social Touch Questionnaire, observed four virtual scenarios involving human touch, physical threat (a rock), non-social touch (a ball), or social approach without touch (a human-held ball). During each approach, tactile stimuli were delivered at different time points, and participants pressed a button upon touch detection. Preliminary results showed an enlarged PPS boundary for human touch in high touch avoiders compared with low touch avoiders. High touch avoiders also rated human touch and physical threat as similarly unpleasant. Human touch was rated as less dangerous than physical threat in both groups; however, only high touch avoiders rated human touch as more dangerous than non-social touch. Physiological indices did not show condition-related modulation. In a subsequent comfort-distance task, high touch avoiders preferred a larger interpersonal distance than low touch avoiders. Together, these findings suggest that, for autistic adults who avoid social touch, discomfort may begin before contact occurs, reflecting both subjective preferences and anticipatory multisensory facilitation. More broadly, respecting individual social touch preferences may support autistic people's comfort and wellbeing.

187. Assessing Digital Dexterity via Smartphone Typing: An Unsupervised Clustering Approach for Adaptive User Interfaces

Alba Liso¹, Lorenzo Viviani², Alberto Morelli³, Elisa Straulino⁴, Timothy Rondanini¹, Leonardo Bocchi³, Laila Craighero¹

¹ Department of Neuroscience and Rehabilitation, University of Ferrara

² Department of Medical Sciences, University of Ferrara

³ Department of Information Engineering, University of Florence

⁴ Department of General Psychology, University of Padova

Mini-talk · Action and movement

Mobile typing is a widespread activity, yet the assessment of digital competence is still often based on chronological age, relying on the distinction between “Digital Natives” and “Digital Immigrants” (Prensky, 2001). This approach overlooks substantial inter-individual variability in sensorimotor skills underlying smartphone interaction. The present study adopts a data-driven approach to investigate digital dexterity through behavioral metrics of touchscreen interaction. Data were collected from 106 participants (aged 18–75) using a custom-developed Android application (SMoDS; Morelli et al., 2025) in ecological settings. Participants performed common smartphone tasks involving both content generation and

information search. Multiple typing and swiping metrics were extracted, including temporal (hold time, flight time) and pressure-based measures. Analyses indicated that typing kinematics were more informative than swiping metrics in capturing individual differences. Based on these results, a subset of typing features was selected and entered an unsupervised K-means clustering analysis. Results revealed three distinct interaction profiles: a methodical profile, characterized by controlled and stable performance; a hesitant profile, marked by slowness and irregularity; and a fluid profile, defined by faster and more rhythmic execution. These profiles were not strictly associated with age, with participants from different age groups distributed across clusters. By identifying distinct patterns of smartphone interaction, this study contributes to the understanding of digital behavior beyond age-based categorizations and highlights the relevance of sensorimotor variability in digital contexts. Morelli, A., Liso, A., Viviani, L., Straulino, E., Sartori, L., Craighero, L., & Bocchi, L. (2025). Mobile Application for Sensorimotor Data Collection in Cognitive and Behavioral Research. 2025 47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 1–4. <https://doi.org/10.1109/EMBC58623.2025.11254122> Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. On the Horizon, 9(5), 1–6. <https://doi.org/10.1108/10748120110424816>

188. Digital Tools for Assessing Attention and Executive Functions in Adults: A Systematic Review of Validity and Accessibility

Vincenzo Livoti¹, Matteo Vitacca², Mario Bonato¹

¹ University of Padova, Department of General Psychology & Padova Neuroscience Center

² University of Pavia, Department of Brain and Behavioral Sciences

Mini-talk · Methodology

Digital cognitive assessment is increasingly integrated into neuropsychological research and clinical practice. However, the psychometric robustness and accessibility of available instruments has yet to be thoroughly addressed. We therefore conducted a systematic review focused on digital tools for the assessment of attention and executive functions as these two cognitive domains constitute elective candidates for computer-based testing. Following PRISMA 2020 guidelines and pre-registration in PROSPERO, we conducted a systematic search across PubMed, Scopus, and Embase. Of 2,583 identified records, 236 studies met our inclusion criteria. Tools were classified according to administration settings, accessibility in terms of data/software availability, hardware requirements, costs (free vs paywalled), and psychometric validation. One hundred seven distinct digital tools were identified, spanning a continuum from digitized paper-and-pencil tests to immersive VR and eye-tracking hybrid systems. The large majority of tools were administered in person (85%), with only 12% involving remote unsupervised assessment. Accessibility was severely limited: only 34.9% of tools reported any accessibility information, most operated under paid subscriptions, and only 6.6% qualified as fully open access. Our assessment of psychometric validation revealed a critical mismatch: widely-used tools were not necessarily the most thoroughly validated, while innovative tools (VR, serious games) showed promising yet preliminary evidence. Normative datasets were rarely reported and often restricted to single languages. Digital neuropsychology faces a structural trade-off between psychometric rigor and accessibility. The field would

greatly benefit from standardized validation practices, multilingual normative data, and stronger commitment to Open Science principles to ensure equitable and evidence-based clinical implementation.

189. Systematic form-meaning mappings convey concreteness in novel words

Giulia Loca¹, Rolando Bonandrini¹, Marco Marelli¹

¹ University of Milano-Bicocca

Mini-talk · Language, reading and music

Concreteness, capturing how tangible a word referent is, is a core dimension underlying language representation and processing. According to grounded cognition, concrete words have processing advantages over abstract words, as they are grounded in both sensory and linguistic information. While recent research has linked this effect to surface properties, we hypothesize that sub-lexical cues are sufficient to infer concrete vs. abstract meaning even for novel words. To test this, we conducted two experiments (N = 34 each) using 162 novel words generated by a Semantic Pseudoword Creator (Bonandrini et al., under review), a model that estimates the mapping between orthography and semantic vectors from existing words to generate novel words. The model was fed 100 concrete and 100 abstract words as prompts to produce novel words. In Experiment 1, words were paired to serve as prompt, while in Experiment 2 they were combined in 5-word prompts. From the resulting novel words, we selected 81 concrete and 81 abstract items based on model predictions. In a two-alternative forced choice task, participants judged whether each novel word denoted a concrete or abstract concept. In both experiments, participants' judgments aligned with model predictions. Concrete novel words were categorized more accurately than abstract ones, consistent with the concreteness effect observed for words. Overall accuracy was higher in Experiment 2, where novel words resulted from more averaged semantic representations. These findings demonstrate that concreteness is systematically encoded at the sub-lexical level, suggesting that form-meaning mappings can convey concreteness information to human participants even for novel words.

190. Does gaze direction modulate the Other-Race Categorization Advantage? A cross-cultural study

Anna Lorenzoni¹, Masaki Mori², Mario Dalmaso¹

¹ Dipartimento di Psicologia dello Sviluppo e della Socializzazione, Università di Padova

² Japan Advanced Institute of Science and Technology

Mini-talk · Social cognition

The other-race categorization advantage (ORCA) refers to the tendency to categorize other-race faces faster than own-race faces. This phenomenon is thought to occur because, whereas own-race faces would be perceived and treated more holistically (i.e., as a whole), the processing of other-race faces would be mainly driven by analyses of single components, such as the eyes, thus leading to faster categorisation of faces belonging to other ethnic groups. However, the precise perceptual mechanisms underlying ORCA remain debated. Gaze direction represents a valuable tool to address this question, as direct gaze is known to promote holistic processing whereas averted gaze fosters a more analytic approach. The present study therefore investigated whether gaze direction modulates ORCA and whether this modulation varies across cultural groups. White Italian (N_{tot} = 243) and East Asian

Japanese (N_{tot} = 253) participants completed a race categorization task in which White and Asian faces were displayed with direct or averted gaze, either intermixed (Experiments 1A-1B) or in separate blocks (Experiments 2A-2B). In both experiments, Italian participants consistently showed ORCA with averted gaze, but this advantage disappeared with direct gaze. Japanese participants, instead, exhibited a robust ORCA in both experiments regardless of gaze direction. These diverging patterns suggest that gaze direction differentially modulates ORCA depending on observers' cultural background. In particular, the absence of gaze modulation in Japanese participants may reflect cultural differences in face scanning strategies, with East Asian observers typically focusing on the central face region rather than the eye area.

191. Approccio esplorativo di machine learning per lo studio della performance in compiti di simulazione basato su Nested Monte Carlo Cross-Validation

Federica Losavio¹, Antonietta Curci²

¹ Università degli Studi di Bari Aldo Moro

² Università di Bari Aldo Moro

Mini-talk · Attention, perception and consciousness

L'identificazione dei fattori psicologici associati alla capacità di simulazione rappresenta una sfida complessa ed è tuttora caratterizzata da risultati inconsistenti in letteratura, spesso basati su approcci univariati incapaci di cogliere le interazioni tra variabili. Il presente studio adotta un approccio multivariato ed esplorativo basato su tecniche di machine learning per indagare i potenziali predittori della capacità di simulazione. Un campione di 120 partecipanti, istruiti a simulare un deficit attentivo, ha completato una batteria di misure self-report e prove cognitive, comprendenti tratti di personalità e indicatori di funzionamento psicologico. I dati sono stati analizzati mediante una procedura di Monte Carlo cross-validation combinata con nested cross-validation, al fine di ottenere stime robuste delle prestazioni e della capacità di generalizzazione out-of-sample. I risultati preliminari indicano una capacità predittiva complessivamente limitata dei modelli. Le analisi di importanza delle variabili evidenziano tuttavia associazioni deboli ma relativamente stabili con dimensioni quali anedonia, coscienziosità e coping emotivo, insieme a indici di funzionamento cognitivo. Nel complesso, i risultati suggeriscono che la performance in condizioni di simulazione non è adeguatamente spiegabile attraverso singoli tratti psicologici o cognitivi, ma riflette un fenomeno multideterminato e continuo, in linea con quanto riportato in letteratura. Tali evidenze offrono importanti indicazioni su dimensioni psicologiche potenzialmente rilevanti nella performance simulativa supportando l'utilità di approcci multivariati nello studio della simulazione.

192. Analyzing Real-Game Dynamics in Team Sports with Vision Language Models

Daniele Lozzi¹, Ilaria Di Pompeo², Martina Marcaccio², Michela Alemanno², Giorgia Capitani², Simone Migliore², Giuseppe Curcio²

¹ Dipartimento di Medicina Clinica, Sanità Pubblica, Scienze della Vita e dell'Ambiente, Università degli Studi dell'Aquila

² Dipartimento di Scienze cliniche Applicate e Biotecnologiche, Università degli Studi dell'Aquila

Mini-talk · Methodology

To understand visual analysis and cognitive processing strategies in dynamic contexts, it is necessary to analyze behavior in ecological settings. Wearable eye-trackers provide numerous metrics, such as pupillometry, gaze coordinates and eye opening, but they do not provide information about what the subject is looking at. Here, we present a system based on a Vision Language Models (VLM) that, by integrating eye-tracking data with video from the device's external cameras, extracts and analyzes data during basketball games in a complete ecological context. The pipeline introduces object detection via a combination of models that support zero-shot learning, enabling it to identify players in real time, track the ball, and distinguish teams using text prompts, avoiding to retrain the model for each game. Additionally the architecture incorporates supplementary specialized models to ensure high-fidelity contextual mapping, such as detecting the basketball hoop integrates a human-in-the-loop interface that allows users to review the output driving a continuous cycle of improvement. Preliminary analysis validating the system confirmed previous literature findings regarding coaches' visual attention. Specifically, the data confirmed a statistically significant difference in time spent looking into the direction of their own team between offensive and defensive phases, indicating that game dynamics dictate distinct visual strategies. Our initial findings demonstrate that this active-learning ecosystem provides a robust and highly accurate new method for decoding athletes' visual-motor behavior in fully ecological sports settings.

M

193. Support or burden? Relationship insecurity moderates the psychophysiological benefit of partner presence during acute stress

Antonio Maffei¹, Iris Amidei¹, Fiorella Del Popolo Cristaldi², Paola Sessa¹

¹ Università degli Studi di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione

² Università degli Studi di Padova, Dipartimento di Psicologia Generale

Mini-talk · Emotions and motivation

Social support during stress is a powerful source of emotional regulation, with an established link with psychological and physical health. This stress buffering effect of social support is typically stronger in intimate relationships, nonetheless its strength is not uniform, but varies across individuals. Part of this variability can be explained by individual differences in relationship and attachment style, because people with attachment insecurity are less likely to perceive the partner as a source of support. We tested this hypothesis inviting participants (N = 41) to participate in a stress induction task (TSST) together with their romantic partner. During the task we collected participants's cardiovascular and startle reactivity as well as their levels of perceived stress and anxiety. Additionally we measured participants' relationship style using the Experience in Close Relationships Scale (ECR-R). Results show that both attachment anxiety and avoidance have a moderating effect on stress reactivity, with a differential effect. Avoidance is positively related to the cardiovascular component of the stress response and to startle reactivity, suggesting that partner presence acts as an additional source of stress for participants high in this dimension. Attachment Anxiety on the other hand is linked with a reduced cardiovascular reactivity during acute stress, suggesting that partner presence is a

strong source of stress buffering for participants high in this dimension. This data help to understand the heterogeneity of social stress buffering, also highlighting potential biological markers to identify maladaptive emotional regulation in intimate relationships.

194. From Skin to Brain: Electrophysiological and Thermosensory Mechanisms of Body Ownership

Carlotta Maiocchi¹, Giulia Mattavelli², Francesco Crotti³, Irene Gorrino², Eleonora Arrigoni⁴, Alberto Pisoni⁴, Gabriella Bottini³, Riccardo Pirone², Gerardo Salvato³

¹ Scuola Universitaria Superiore IUSS (Pavia)

² IUSS Cognitive Neuroscience (ICoN) Center, Scuola Universitaria Superiore IUSS, Pavia, Italy

³ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

⁴ Psychology Department, University of Milano-Bicocca, Milan, Italy

Intervento in simposio · Attention, perception and consciousness

Cutaneous sensory signals and interoception are fundamental to human survival, shaping both bodily self-awareness and decision-making processes. Recent research has highlighted the role of skin temperature in body ownership—the sense that one's body parts belong to oneself—yet the neural mechanisms underlying this relationship in healthy individuals remain unclear. In the present work, we combined two complementary approaches to investigate how bodily signals contribute to self-representation and impulsivity. First, using a multisensory illusion paradigm (mirror box illusion), we modulated hand ownership while recording skin temperature and electroencephalographic (EEG) activity. Reduced ownership was associated with a decrease in hand temperature, alongside neural perturbations in the theta/low-alpha band within right premotor regions. Functional connectivity across a bilateral frontoparietal network, including the insula, correlated with these temperature changes, suggesting a neural signature linking thermosensation and embodiment. Second, we examined the causal role of interoceptive processing by applying high-definition transcranial direct current stimulation (HD-tDCS) over the right insula and dorsal anterior cingulate cortex (dACC) during a heartbeat detection task. Stimulation reduced participants' ability to detect synchronous heartbeats, indicating decreased interoceptive accuracy, while improving performance in exteroceptive control trials. These findings suggest differential contributions of the insula and dACC in balancing interoceptive and exteroceptive processing. Together, these results demonstrate that both cutaneous and internal bodily signals are integral to embodied self-representation. They further highlight the insula and dACC as key neural substrates supporting the integration of interoceptive and exteroceptive information, providing new insights into the physiological and neural foundations of the embodied self.

195. Domain-specific disruption and oscillatory compensation: causal and correlational EEG evidence on working memory in ageing.

Stergios Markis¹, Esteban Leon-Correa

¹ Università degli Studi eCampus, Dipartimento di Scienze Teoriche e Applicate

Mini-talk · Memory

Ageing is characterised by marked declines in working memory (WM), although older adults can preserve performance through compensatory neural mechanisms. Across two complementary EEG studies, we investigated the causal contribution of the left

dorsolateral prefrontal cortex (DLPFC) and the oscillatory dynamics supporting verbal and visuospatial WM in older adulthood. Study 1 combined continuous theta-burst stimulation (cTBS) with ERP recordings in twenty healthy older adults performing verbal and visuospatial N-back tasks (2-back and 3-back). Whereas ERP amplitudes were stable across stimulation conditions, DLPFC inhibition selectively prolonged P200 latencies in the verbal task, indicating disrupted early attentional gating. N200 and P300 latency modulations reflected load-dependent compensatory slowing of cognitive control. Visuospatial performance was comparatively preserved, consistent with right-lateralised networks and domain-specific DLPFC involvement. Study 2 contrasted younger and older adults during verbal (Letter Span) and visuospatial (Corsi Block) tasks under retention and manipulation conditions. Behaviourally, older adults preserved Letter Span performance but showed deficits in the Corsi Test. Neurally, younger adults exhibited stronger mid-frontal and temporal theta activity, indexing efficient recruitment of WM processes. Older adults showed attenuated theta and relied on alpha-mediated compensation during the delay period: reduced alpha suppression facilitated verbal rehearsal, whereas increased upper alpha protected stored visuospatial information. Together, these findings indicate that left-DLPFC-dependent temporal coordination and mid-frontal theta jointly support efficient WM, while alpha oscillations flexibly sustain compensation in ageing. ERP latency and oscillatory markers emerge as sensitive indices of domain-specific decline and adaptive neural reorganisation.

196. La validazione italiana della Sport Motivation Scale – II

Luca Mallia¹, Ayse Nur Metin¹, Davide Vitalucci¹, Alessandra De Maria¹, Arnaldo Zelli¹, Federica Galli¹

¹ Università di Roma Foro Italico

Mini-talk · Methodology

La Sport Motivation Scale (SMS; Pelletier e colleghi, 1995) ha dimostrato validità e affidabilità in diverse traduzioni, inclusa quella italiana. Alcune criticità della scala hanno portato gli stessi autori a pubblicare la Sport Motivation Scale II (SMS II; 2013), costituita da 18 item, misura le sottodimensioni motivazionali teorizzate dalla Self Determination Theory (SDT). Lo scopo è stato validare la versione italiana testandone la validità fattoriale e l'attendibilità (Studio 1), considerando l'invarianza della scala per genere e tipologia di sport praticato (Studio 2). È stata esaminata la validità di costrutto utilizzando diverse variabili psicologiche specificamente legate allo sport (Studio 2). Le analisi sono state condotte utilizzando il software Jamovi. Studio 1 Hanno compilato la versione italiana dalla SMS II 282 studenti/atleti (68.1% maschi; Mediaetà: 22.2 ± 4.06 anni. Di questi, 200 hanno completato nuovamente la scala dopo 1 mese per la valutazione dell'attendibilità test-retest. Studio 2 Un totale di 382 studenti/atleti (62.6 % maschi; Mediaetà: 21.3 ± 4.56 anni) ha compilato la versione italiana dalla SMS II insieme alle seguenti scale: l'Athlete Burnout Questionnaire, la Performance Failure Appraisal Inventory e 2 sottoscale (i.e., constrained and enthusiastic) dello Sport Commitment Questionnaire -II. Studio 1: L'Analisi Fattoriale Confermativa (CFA) del modello originale della scala non ha mostrato un buon adattamento (CFI=.84; TLI=.83; RMSEA=.09). Tutti gli item saturavano significativamente sui fattori originali ad eccezione dell'item 16 (i.e., "Perché mi sento meglio con me stesso quando lo faccio"), la cui saturazione non

ha raggiunto la significatività statistica (.11; p=107). Rimuovendo l'item 16, la struttura a 17 item ha mostrato un buon adattamento (CFI=.93; TLI=.91; RMSEA=.07). L'analisi delle covarianze fra le sottodimensioni della motivazione ha evidenziato un pattern coerente con il continuum motivazionale descritto dalla SDT. I valori dell'attendibilità sono risultati accettabili sia in termini di coerenza interna (Mc Donald's ω = .71 -.80) che di stabilità test-retest (r = .56 -.71) per ciascuna sottodimensione. Studio 2 La CFA sulla scala a 17 item ha confermato il buon adattamento osservato nello Studio 1 (CFI=.94; TLI=.92; RMSEA=.07). Le analisi multigruppo, condotte considerando genere e tipologia di sport praticato, hanno evidenziato l'invarianza delle saturazioni fattoriali (ovvero, weak invariance) e delle intercette (ovvero, strong invariance), ma non l'invarianza dei residui (ovvero, strict invariance). L'analisi delle correlazioni fra le sottodimensioni della motivazione e gli altri costrutti psicologici indagati ha mostrato un pattern di relazioni significative coerente con il continuum motivazionale. Conclusioni I risultati dei due studi hanno confermato la bontà delle caratteristiche psicometriche della versione italiana a 17 item della SMS II. Bibliografia di riferimento Pelletier, L. G. Rocchi, M. A. Vallerand, R. J. Deci, E. L. Ryan, R. M. (2013). Validation of the revised sport motivation scale (SMS-II). *Psychology of Sport and Exercise* Pelletier, L., Fortier, M., Vallerand, R., Tuson, K., Brière, N., & Blais, M. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: the sport motivation scale (SMS). *Journal of Sport and Exercise Psychology*, 17, 35e54.

197. Measuring Statistics Anxiety in the era of Artificial Intelligence

Gaia Azzurra Malluzzo¹, Giuseppe Mignemi¹, Laura Di Leonardo², Caterina Primi², Palmira Faraci¹

¹ Università degli Studi di Enna "Kore", Dipartimento di Scienze dell'Uomo e della Società

² Università degli Studi di Firenze, Dipartimento di Neuroscienze, Psicologia, Area del Farmaco e Salute del Bambino (NEUROFARBA)

Mini-talk · Methodology

Statistics anxiety is a well-documented barrier to learning among psychology students, negatively impacting academic performance and engagement with quantitative methods. Although several instruments have been developed, significant limitations persist, including inadequate differentiation from related constructs (e.g., mathematics anxiety and attitudes toward statistics), inconsistent factorial structures, and a potential inability to adequately reflect contemporary learning environments, which are increasingly influenced by Artificial Intelligence (AI). The growing use of AI tools is reshaping how students approach statistical learning and may also influence their emotional responses to statistics. This shift highlights the need for updated measurement instruments. The Statistics Anxiety Questionnaire in the era of Artificial Intelligence (AI-SAQ) was developed based on an extensive literature review and established guidelines for psychological test construction. Seven dimensions were identified: Ambiguity & Uncertainty Anxiety, Statistical Competence Anxiety, Teaching-Related Anxiety, Exam Anxiety, Asking for Help to the Artificial Intelligence, Perceived Academic & Professional Relevance, and a Lie Scale. An initial item pool was generated to cover these domains, with items designed to reflect both traditional and AI-related aspects of statistics anxiety. Expert review was conducted to ensure clarity, relevance, and theoretical coherence, resulting in a refined 70-item preliminary

instrument. The study involves validating the AI-SAQ in samples of university psychology students, examining its internal structure, reliability, and relations to other variables. The AI-SAQ represents a theoretically grounded effort to advance the assessment of statistics anxiety by incorporating the role of Artificial Intelligence in contemporary educational contexts.

198. The Revised Extended iSelf: Disentangling the Effects of Smartphone Position and Ringing on Cognitive Performance and Psychophysiological Parameters

Claudia Virginia Manara¹, Fabrizio Sors¹, Stefano Pileggi¹, Cristina Montesano², Maria Colomba¹, Mauro Murgia¹

¹ Università degli Studi di Trieste

² Università eCampus

Poster · Attention, perception and consciousness

The Extended Self Theory posits that individuals perceive their possessions – e.g., the smartphone – as an extension of the Self, the separation of which may influence cognition and may cause emotional distress. In line with this theory, previous research found that when the smartphone is distant and ringing, cognitive performance decrease and psychophysiological activity increases, compared to when the smartphone is near and does not ring. The present study aims to disentangle the effects of the smartphone Position (Near vs. Distant) and Ringing (Pre vs. Post) on cognitive tasks and psychophysiological activity; we used a 2x2 mixed design, with Position as the between-subjects independent variable and Ringing as the within-subjects independent variable. Participants (N = 70) completed two word-search puzzles, while their psychophysiological activity was being recorded. We primarily hypothesized main effects of smartphone Position and Ringing, as well as the interaction between these factors, on cognitive performance and psychophysiological parameters; furthermore, we hypothesized that participants in Distant condition would perceive less extension of the Self. As for cognitive performance, findings did not reveal any effect of Position, Ringing or their interaction. As for psychophysiological parameters, only Ringing had an effect, which was primarily reflected by increased electrodermal activity, although it was inconsistent with other parameters. No difference in the perception of extended self was observed. This pattern of results may reflect habituation to constant smartphone connectivity in contemporary users.

199. Beyond Dyslexia: A Screening Questionnaire Capturing Cross-Domain Specific Learning Disorders Profiles in Primary School Children

Martina Mancarella¹, Stefania Fontolan², Sandro Franceschini³, Sara Berton³, Gerardo Pellegrino², Eleonora Pizzigallo², Ilaria Salmaso⁴, Andrea Faccioetti³, Lorian Simeoni², Cristiano Termine⁴,

¹ Dipartimento di Medicina e Innovazione Tecnologica, Università degli Studi dell'Insubria; Faculty of Psychology and Educational Sciences, Parenting and Special Education Research Unit, KU Leuven, Belgium

² Struttura Complessa di Neuropsichiatria dell'Infanzia e dell'Adolescenza, ASST dei Sette Laghi

³ Developmental and Cognitive Neuroscience Lab, Dipartimento di Psicologia Generale, Università degli Studi di Padova

⁴ Dipartimento di Medicina e Innovazione Tecnologica, Università degli Studi dell'Insubria; Struttura Complessa di Neuropsichiatria dell'Infanzia e dell'Adolescenza, ASST dei Sette Laghi

Poster · Language, reading and music

Beyond Dyslexia: A Screening Questionnaire Capturing Cross-Domain Specific Learning Disorders Profiles in Primary School Children

200. Le avversità precoci alterano la regolazione ossitocinergica dei circuiti motivazionali

Camilla Mancini¹, Alice Corinti Passeri², Marica Denitti³, Lucy Babicola⁴, Matteo Di Segni⁵, Carlo Cifani¹, Rossella Ventura²

¹ Università di Camerino, Scuola di Scienze del Farmaco e dei Prodotti della Salute

² Sapienza Università di Roma, Dip. di Psicologia

³ Dip. di Psicologia (Sapienza Università di Roma)

⁴ Fondazione Santa Lucia IRCCS

⁵ Istituto scientifico IRCCS Eugenio Medea

Intervento in simposio · Emotions and motivation

Le esperienze avverse precoci, che alterano il legame di attaccamento, rappresentano un importante fattore di rischio per l'incremento di vulnerabilità alla depressione in età adulta. Tuttavia, i meccanismi attraverso cui tali esperienze influenzano i sistemi motivazionali e relazionali a lungo termine restano poco chiari. In particolare, il ruolo dell'ossitocina nei processi di regolazione socio-emotiva correlati a stress precoce è ancora poco esplorato. Attraverso il paradigma di Repeated Cross-Fostering (RCF), un modello che altera l'attaccamento tra madre e cuccioli, sono stati valutati gli effetti su comportamenti correlati all'attaccamento e, in età adulta, alla sintomatologia depressiva. Sono state successivamente analizzate le modificazioni nello sviluppo del sistema ossitocinergico e nella sua interazione con circuiti motivazionali. L'esposizione a RCF ha indotto alterazioni comportamentali selettive nelle femmine, suggerendo una maggiore suscettibilità alle avversità precoci. In età adulta, emergono cambiamenti nella regolazione dei recettori ossitocinergici in aree chiave dei circuiti della motivazione. A livello funzionale, in condizioni basali non si osservano differenze, mentre uno stress acuto evidenzia una marcata disregolazione nella risposta ossitocinergica e GABAergica, con un pattern compatibile con un aumento del controllo inibitorio e una ridotta responsività a stimoli motivazionali. Questi risultati suggeriscono che le avversità precoci possano alterare in modo duraturo i meccanismi di regolazione socio-emotiva, contribuendo ad incrementare la vulnerabilità depressiva in modo sesso-specifico. L'interazione tra ossitocina e circuiti motivazionali emerge come un possibile mediatore chiave degli

effetti dello stress precoce.

201. Beyond the score: machine learning insights into the mismatch between objective and subjective cognitive decline

Valerio Manippa¹, Antonio Lacalamita², Giorgia Francesca Scaramuzzi³, Daphne Gasparre³, Alfonso Monaco², Paolo Taurisano³, Alessandro Fania², Alessandro Fania²

¹ Dipartimento di Scienze Teoriche e Applicate, Università degli Studi eCampus

² Dipartimento Interateneo di Fisica M. Merlin, Università degli Studi di Bari Aldo Moro

³ Dipartimento di Biomedicina Traslationale e Neuroscienze, Università degli Studi di Bari Aldo Moro

Mini-talk · Health, sport and wellbeing

The discrepancy between objective and subjective impairment suggests that self-perceived deficits result from a complex interplay of personality, social factors, and metacognition, rather than being mere proxies for neurodegeneration. Traditional statistics often fail to capture the non-linear interactions underlying phenomena like anosognosia or over-reporting symptom. Six-hundred-sixty-two participants (aged 21–80) completed the MoCA, the Subjective Cognitive Decline questionnaire (SCDq), the Italian Face-Name Association Test, Story-based Empathy Task, HEXACO-60, PID-5, UCLA Loneliness, and Lubben Social Network scales. We employed a CatBoost framework to evaluate the predictive power of these measures on objective functioning (MoCA) and subjective complaints (SCDq), using 100 repetitions of 5-fold cross-validation and SHAP explainability to disentangle their contributions. We further derived a metacognitive index based on the SCD-MoCA discrepancy. Models revealed measurable predictive information for both outcomes. MoCA prediction achieved moderate performance ($R^2=0.316\pm0.013$) but was driven mainly by age and education. Conversely, SCDq showed a similar regression signal ($R^2=0.285\pm0.015$) and stable classification (Accuracy= 0.696 ± 0.011 ; AUC= 0.754 ± 0.009). Multiclass classification of the metacognitive index showed structured discrimination; notably, restricting the analysis to the two extreme awareness profiles substantially improved separation (Accuracy= 0.764 ± 0.026 ; AUC= 0.797 ± 0.026). SHAP analyses revealed that subjective cognitive complaints relied on a more distributed feature pattern, reflecting complex interactions between personality and social factors, while objective tools like the MoCA are heavily influenced by demographic reserves. Explainable AI enables a precise characterization of cognitive awareness, highlighting the importance of multidimensional measures, including personality and social connectivity, in clinical assessments to better identify distinct awareness profiles.

202. Does Language Shape Thermal Perception? A Behavioural study on Thermal Texts and Subjective thermal comfort

Silvia Angela Mansi¹, Marco Arnesano², Luca Rinaldi³

¹ Università di Pavia, Dipartimento di Scienza del Comportamento e del Sistema Nervoso

² Università degli Studi eCampus, Dipartimento di Scienze Teoriche e Applicate (DiSTA)

³ Università di Pavia, Dipartimento di Scienze del comportamento e del Sistema Nervoso

Poster · Language, reading and music

Thermal comfort refers to the subjective state of satisfaction with the thermal environment, shaped by both physiological and psychological factors. While environmental parameters such as

ambient temperature, humidity, and air velocity are well-established determinants of thermal perception, growing evidence suggests that cognitive and affective processes play a significant role in modulating how individuals experience thermal states. In particular, the relationship between language and bodily perception has gained increasing attention within the embodied cognition framework, which posits that conceptual processing is grounded in sensorimotor and interoceptive experience. Linguistic stimuli carrying thermal-semantic content such as descriptions of hot or cold environments may thus activate mental simulations of temperature, potentially influencing subjective thermal perception beyond purely physical inputs. The present study investigates whether reading texts with conceptual references to heat, cold, or neutral thermal conditions can modulate subjective thermal perception. Participants completed an online experiment in which they read 9 texts, 3 per condition (warm, neutral, cold), matched for length, valence, and arousal. Before and after each text, thermal comfort, thermal sensation, and thermal preference were assessed via Likert scales, allowing us to capture within-participant shifts in subjective thermal state induced by linguistic content alone. We aim to characterize the extent to which language-induced thermal imagery is sufficient to shift self-reported thermal perception, independently of any physical manipulation of the environment. Findings will contribute to a deeper understanding of top-down linguistic influences on interoception and thermal experience, with potential implications for the design of thermally comfortable built environments.

203. Cognitive Performance and Gamma-Band EEG alterations in Older Women in a laboratory model of accelerated aging (HDBR)

Serafino Paolo Mansueto¹, Antonio Cataneo¹, Marco Marino¹, Alessandro Angrilli¹

¹ University of Padua, General Psychology Department

Poster · Life cycle (e.g., development and aging)

Space environment, namely weightlessness, induces physiological alterations resembling accelerated aging, potentially impacting brain function and cognition. However, its effects on cognitive performance in the natural aging brain remain poorly understood. Using Head-Down Bed Rest (HDBR) as a ground-based analogue, this study examined its effects on cortical gamma-band activity (30–50 Hz) and cognition in older women. Forty healthy older women were randomly assigned to HDBR (-6° ; $N = 20$) or a seated control condition ($N = 20$). Five 5-min. eyes-open resting-state hdEEG recordings were collected (REST-1 to REST-5). Between REST-3 and REST-4, participants completed the Mental Rotation Test, Dual Task, and Mackworth Clock Test. Gamma-band power was estimated using sLORETA source reconstruction, and FDR correction ($p < .05$). The HDBR group showed significantly lower accuracy in the Mental Rotation ($p = 0.01$) and Dual Task ($p = 0.01$) compared to controls. In the Mackworth Clock Test, HDBR participants exhibited a higher number of false positive responses ($M \approx 56.85$) relative to the sitting group ($M \approx 34.95$; $p = 0.005$), indicating impairment in sustained attention. At the neural level, gamma-band power was significantly reduced in the HDBR group, with effects emerging at REST-2, increasing at REST-3, and peaking at REST-4, predominantly over occipital and occipito-parietal regions. Simulated microgravity impairs cognitive performance and reduces cortical gamma activity in older women. These findings suggest that

gamma-band attenuation may represent a neurophysiological marker of cognitive vulnerability under conditions of aging and prolonged immobilization, with implications for spaceflight and terrestrial health.

204. Dual-Task Interference in Prospective Memory: Focal vs. Non-Focal Cue Effects

Martina Marcaccio¹, Ilaria Di Pompeo², Simone Migliore², Michela Alemanno², Giorgia Capitani², Giuseppe Curcio²

¹ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche, Applicate e Biotecnologiche

² Università degli Studi dell'Aquila

Mini-talk · Memory

Prospective memory (PM) refers to the ability to remember to perform actions planned for the future whilst engaged in ongoing activities. As prospective memory often occurs in multitasking situations, this study examined whether a concurrent motor task interferes with PM performance and whether such interference affects focal and non-focal cues differently. Forty participants (M= 22.3 years, SD = 2.74; 14 males) performed a lexical decision task (LDT) with an embedded event-based PM task, comprising focal and non-focal cues. In the focal trials, participants responded to a specific target word, whilst in the non-focal trials, they responded to words belonging to a predefined semantic category. The experiment included single-task and dual-task conditions. In the dual-task condition, participants simultaneously performed a sequential finger-tapping task (SFTT). Reaction times and accuracy were analysed. A repeated-measures ANOVA showed that cognitive load significantly affected reaction times in the ongoing task, with slower responses and reduced accuracy in the dual-task condition ($p < .001$). A focality effect was observed, with faster responses for focal compared to non-focal cues ($p < .01$). However, this advantage disappeared under dual-task conditions, as indicated by a significant interaction between task condition and cue focality ($p = .014$). Prospective memory accuracy was also reduced under dual-task conditions ($p < .001$). These findings suggest that prospective memory is modulated by motor-cognitive interference. Although focal stimuli are typically associated with spontaneous retrieval processes, the results suggest that such processes are not entirely automatic and may depend on the availability of central attentional resources.

205. From long to short forms: An illustrative case of dimensional misalignment in the Narcissistic Personality Inventory

Tatiana Marci¹, Elisa Saggioro¹, Nicolò Cocchetto¹, Giulia Calignano¹, Livio Finos²

¹ Dipartimento di Psicologia dello Sviluppo e della Socializzazione, Università degli Studi di Padova

² Dipartimento di Scienze Statistiche, Università degli Studi di Padova

Mini-talk · Methodology

Sound theoretical frameworks are critical for the development of valid and reliable instruments. In psychological research, questionnaires are among the most frequently used tools for assessing constructs and examining their complex relationships. The development of short forms – often involving item reduction and the selection of putative core dimensions – is a widespread practice; however, it is not always adequately supported by theoretical and empirical evidence. As an illustrative case, the present study focuses on the Narcissistic

Personality Inventory (NPI; Raskin & Hall, 1979). Short versions derived from the original 40-item scale involve a reconfiguration of the factorial structure. In particular, the NPI-13 broadly retains three dimension labels from the original NPI-40 (i.e., Leadership/Authority, Grandiose Exhibitionism, and Entitlement/Exploitativeness), while including items originally associated with different dimensions. Using a sample of 503 Italian adults (71% female; Mage = 32.7, SD = 13.4), confirmatory factor analyses revealed several critical issues with the three-factor correlated model of the NPI-13, including inter-factor correlations approaching unity ($r = .93-.99$). This pattern suggests a substantially unidimensional structure rather than distinct factors, as reflected in the good fit of the one-factor model and the lack of discriminant validity among the latent factors. Overall, these results offer limited support for a clearly multidimensional structure of the short NPI and raise concerns regarding its ability to reproduce the original multidimensional theoretical framework, with important implications for score computation and use. Further, they underscore the critical importance of adopting procedures that integrate theoretical and methodological considerations when developing short-form instruments.

206. TITOLO: Stimolo, percezione ed esperienza psicologica: un approccio psicofisico per lo studio della rigeneratività degli ambienti fisici

Valentina Mariani¹, Luca Laezza¹, Roberto Burro¹, Margherita Pasini¹

¹ Università degli Studi di Verona

Mini-talk · Attention, perception and consciousness

Secondo l'Attention Restoration Theory, la Fascination (i.e., cattura dell'attenzione in modo automatico e non coercitivo) è centrale nella percezione di rigeneratività (PR) degli ambienti fisici. Questo studio connette tre livelli di analisi: le caratteristiche fisiche dello stimolo visivo (Basic Visual Features, BVFs), l'organizzazione percettiva globale dell'immagine (Basic Global Properties, BGPs) e l'esperienza psicologica di rigeneratività, in una prospettiva psicofisica che collega stimolo, percezione ed esperienza. In uno studio in due fasi, 21 partecipanti hanno valutato otto BVFs (e.g., simmetria, collinearità, chiaroscuro) su 12 immagini di ambienti naturali. L'utilizzo del metodo dell'ordine di rango ha permesso di attribuire a ciascuna immagine un punteggio (espresso in z-score) per ciascuna BVFs. I punteggi ottenuti sono stati sottoposti a cluster analysis (K-means) per identificare quattro gruppi omogenei di immagini corrispondenti a specifiche BGPs (apertura, espansione, complessità, texture) di ambienti rigenerativi. Successivamente 102 partecipanti hanno valutato la PR delle stesse 12 immagini su scala Likert. Modelli lineari misti sono stati utilizzati per analizzare le differenze tra i quattro cluster nei livelli di Fascination. È emerso un effetto significativo dei cluster sui livelli di Fascination, $F(3,1119)=54.34$, $p<.001$. Rispetto al cluster texture (intercetta: $M=4.13$), tutti gli altri cluster mostrano livelli significativamente più elevati di Fascination: complessità ($b=1.68$), espansione ($b=1.60$) e apertura ($b=1.36$). Le analisi post-hoc indicano differenze tra complessità e apertura, mentre non emergono differenze tra complessità ed espansione. I risultati supportano l'ipotesi che la rigeneratività percepita emerga da specifiche configurazioni visivo-strutturali degli ambienti fisici, con implicazioni per la progettazione di luoghi orientati al benessere.

207. Spatial associations of losses and gains: Investigating the SNARC-Like effect for valence

Alberto Mariconda¹, Marta Maisto¹, Rossana Actis-Grosso², Valter Prpic³, Mauro Murgia¹

¹ Università degli Studi di Trieste, Dipartimento di Scienze della Vita

² Università degli Studi di Milano-Bicocca, Dipartimento di Psicologia

³ Università eCampus, Dipartimento di Scienze Teoriche e Applicate (DiSTA)

Poster · Space, time and number

The well-known SNARC (Spatial-Numerical Association of Response Codes) effect describes the tendency to map numbers onto a left-to-right mental number line. Similarly, emotional valence is spatially lateralized: right-handed individuals typically associate positive stimuli with the right space and negative stimuli with the left. This study investigated how these spatial dimensions interact when numerical magnitudes are conceptually framed as monetary gains (positive) and losses (negative). Therefore, two experiments were conducted with right-handed participants to test whether semantic framing alone triggers spatial codes. In Experiment 1, a valence classification task required participants to classify numbers as gains (green ink) or losses (red ink). Results revealed no spatial associations for either magnitude or valence; however, a robust advantage emerged, showing significantly faster responses for red stimuli. In Experiment 2, a magnitude classification task required judging numbers as smaller or larger than five, rendering monetary valence completely task-irrelevant. Crucially, the previous advantage for red stimuli disappeared, demonstrating its task-dependency rather than a purely bottom-up sensory capture. Instead, a classic SNARC effect emerged, alongside a robust magnitude-by-valence compatibility effect: responses were faster when magnitude and valence conceptually aligned (small-losses, large-gains). Furthermore, an additive-compatibility effect was observed specifically when response hand, magnitude, and valence were all congruent (e.g., left hand, small numbers, losses). Overall, our findings suggest that monetary valence does not automatically elicit spatial associations. Rather, the spatial coding of economic value relies entirely on the explicit activation of magnitude processing to influence immediate motor responses, highlighting a top-down integration of affective and quantitative dimensions.

208. The boys' club: gender double standards in students' evaluations of university professors

Marco Marini¹, Marco Viola², Pia Campeggiani³

¹ ISTC - CNR

² Università Roma Tre

³ Alma Mater Studiorum, Università di Bologna

Mini-talk · Social cognition

What makes a university professor sound clear, competent, engaging, or authoritative? Ideally, the answer should depend on the quality of the teaching. In practice, it may also depend on whether students believe the professor is a man or a woman. This work presents experimental evidence that gender double standards shape students' evaluations of university professors in the Italian academic context. Across two studies (N=200) with philosophy students, participants evaluated identical lecture excerpts attributed either to male or female professors. In Study 1, lectures were presented as written transcripts and paired with fictitious male or female names. In Study 2, the same lectures were presented as audio recordings, allowing professor gender to be conveyed through both name and voice.

Participants rated each professor on dimensions commonly associated with teaching effectiveness, including clarity, benefit, interest, competence, self-confidence, care, and willingness to attend the professor's course. Results revealed a consistent gendered pattern. Male professors were evaluated more favorably on clarity, benefit, interest, competence, self-confidence, and engagement, whereas female professors were rated as more caring. In the written condition, these biases were especially pronounced among male students, while in the audio condition they emerged among both male and female students. Moreover, egalitarian beliefs did not reliably protect participants from biased evaluations. These findings suggest that student evaluations of teaching are not neutral measures of pedagogical quality, but may reproduce gendered expectations about who "looks" or "sounds" like a good professor. The implications are relevant for academic assessment, career progression, and gender equality in universities.

209. Technology and Embodied Cognition Applied to Neurocognitive Health

Davide Marocco¹, Roberta Simeoli¹

¹ Dipartimento di studi umanistici, Università degli Studi di Napoli Federico II

Intervento in simposio · PANEL (no track)

Neurocognitive disorders (NCD), including Mild Cognitive Impairment (MCI) and Alzheimer's disease, are associated with a progressive decline in cognitive, motor, and functional abilities. Early diagnosis remains a significant challenge due to fragmented clinical procedures, limited integration of diagnostic data, and a strong reliance on self-assessment, particularly in the early stages. In this context, Run2cog is a new digital health application designed to support clinicians in the early identification and continuous monitoring of NCDs. By combining embodied technologies with artificial intelligence (AI), the app aims to provide tools that are ecologically valid, economically sustainable, and accessible to both healthcare systems and patients. The platform integrates sensorimotor, cognitive, and physiological measures collected through widely available devices such as smartphones, tablets, and wearable sensors. It offers intuitive, gamified activities targeting key neurocognitive domains, including executive functions, working memory, visuospatial abilities, attention, and psychomotor parameters. Unlike traditional assessments, Run2cog adopts an embodied cognition perspective, linking cognitive decline to measurable alterations in everyday motor and behavioral patterns. AI-based algorithms analyze multimodal data in real time, enabling personalized monitoring, predictive modeling, and adaptive feedback for both patients and clinicians. It represents a step forward in the integration of technology and clinical practice for neurocognitive health. It provides continuous and non-invasive monitoring that can improve diagnostic accuracy, reduce clinical variability, and facilitate timely interventions.

210. Italian Validation of the Nature Contact Questionnaire (NCQ): A Confirmatory Factor Analysis

Camilla Marossi¹, Elisa Menardo², Margherita Pasini², Margherita Brondino²

¹ University of Verona

² Università degli Studi di Verona, dipartimento di scienze umane

Poster · Methodology

Nature contact in the workplace has been recognized as a protective factor for well-being and occupational stress

reduction. The Nature Contact Questionnaire (NCQ; Largo-Wight et al., 2011) is one of the few instrument that systematically measures nature contact at work across three dimensions: outdoor, indoor, and indirect contact. To date, however, no validated Italian version exists. The present study aimed to validate the Italian version of the NCQ on a sample of 581 Italian workers. Following the original authors' analytical approach, items with insufficient response variability (items 7, 8, and 14) were excluded. The three-factor structure was tested through confirmatory factor analysis (CFA). Results supported the hypothesized three-factor structure, with good model fit indices (RMSEA = .04, 90% CI [.03, .05]; CFI = .97; TLI = .96; SRMR = .04). Factor loadings were generally adequate for the outdoor ($\lambda = .51-.89$) and indoor ($\lambda = .43-.86$) factors. The indirect factor showed greater heterogeneity in loadings ($\lambda = .13-.82$), suggesting that some items may require revision or cultural adaptation for an Italian context. Correlations among factors were low ($r = .09-.17$), confirming their distinctiveness. Internal reliability was good for the outdoor ($\alpha = .77$, $\omega = .79$) and indoor ($\alpha = .75$, $\omega = .77$) subscales, and acceptable for the indirect subscale ($\alpha = .50$, $\omega = .58$). These findings provide preliminary support for the psychometric validity of the Italian NCQ, offering a useful tool for future research on workplace health promotion in Italian-speaking populations.

211. Rhythmic and aperiodic neural dynamics jointly organize visual perception over time

Gianluca Marsicano¹, Michele Deodato¹, David Melcher¹

¹ New York University Abu Dhabi / Division of Science

Intervento in simposio · Space, time and number

Temporal integration is a fundamental operation in vision, allowing the nervous system to accumulate sensory evidence over brief intervals and maintain stable perception despite internal noise. An influential proposal is that neural activity in the alpha-band (~8–13 Hz) provides a temporal scaffold for perception. However, empirical evidence remains inconsistent, with debates over mechanisms linking alpha oscillations to perception, potential confounds between detection and integration, and growing recognition that both oscillatory and aperiodic neural dynamics may shape temporal processing. Here, we developed a novel sustained visual integration paradigm designed to minimize detection confounds, combined with resting-state EEG to probe interactions between oscillatory and aperiodic neural dynamics. Participants (n=83) viewed sustained alternating gratings varying in alternation speed, inducing the perception of either two interchanging gratings (segregation) or a fused plaid (integration). Faster alpha rhythms and steeper aperiodic spectra (lower neural noise) predicted greater temporal resolution and perceptual precision. Importantly, slower alpha frequencies and flatter spectra predicted stronger serial dependence on prior judgments, indicating increased weighting of prior experience and reduced sensory precision. Subjective confidence increased with faster alpha rhythms, reflecting the clarity of sensory evidence and its consistency with previous responses. Together, these findings suggest that perceptual interpretation, confidence, and perceptual history effects in temporal integration reflect the joint influence of alpha rhythms and aperiodic neural activity. Mechanistically, faster alpha rhythms and lower neural noise may enhance perceptual resolution by generating more precise sampling frames per time unit, leading to finer temporal perception, reduced reliance on prior experience, and greater confidence.

212. Language compresses visual information in its distributional properties: evidence from intracranial recordings of non-human primates

Fabio Marson¹, Marco Ciapparelli², Luca Rinaldi³, Marco Marelli¹

¹ Università di Milano-Bicocca

² Università di Trento

³ Università di Pavia

Intervento in simposio · Language, reading and music

While language plays a central role in human categorization, it likely builds on complementary categories previously grounded in perception. In humans, neural responses to images perception can be predicted by distributional models of language. However, language and vision are inherently confounded by both long-term and on-the-fly word-referent associations guided by contextual co-occurrences. To circumvent this issue, we turn to macaques, who, while lacking language abilities, can categorize complex visual stimuli, providing a n optimal test to disentangle the contribution of language to categorization. We analyzed neural activity collected from intracranial recordings in the Visual Ventral Stream of two macaques during the observation of thousands of images of concrete objects, comparing the neural similarity patterns elicited by images with the similarity metrics estimated by a language model reflecting distributional properties of their labels. Additionally, we tested the alignment between neural and language models while controlling for high- and low-level visual features. The language model significantly predicted neural activity in all areas of the VVS in both macaques starting ~40ms post-stimulus onset. Controlling the language model performance for high-level visual features resulted in substantial performance drops especially in V1, whereas controlling for low-level features was largely inconsequential. Hence, we demonstrate that language reflects visual categorical partitions, capturing high-, but not low-level visual features. Signature of such representational overlap is apparent not only at late (IT), but also at the early (V1) stages of visual processing. Altogether, results point to the idea that language represents perceptual information in its distributional properties.

213. Stimulating while recording, all at once: hemodynamic response to the stimulation of the prefrontal cortex (PFC) by a functional near infrared spectroscopy (fNIRS) device

Matteo Martini¹, Michela Battiante¹

¹ UniFG

Poster · Methodology

Based on the mechanism of photobiomodulation (PBM), a recent hypothesis suggests that fNIRS devices may possess an intrinsic neuromodulatory potential. However, the only fNIRS-induced PBM study conducted to date provides insights limited to the behavioral level. In this study we tested whether a short exposure to NIR light from a fNIRS device can alter brain activity. Using a single-blind, sham-controlled crossover design participants were involved, on two different days, in two sessions: an active stimulation condition (fNIRS on) and a control condition (fNIRS off/sham). Each session involved 8 minutes of stimulation (or no stimulation) over the prefrontal cortex (PFC) using a 'Spectratech OEG-16H' device, flanked by two resting-state recording sessions of 30 seconds each. The Experience of Intrusion Scale (EIS) and the PHQ-9 were administered to control for the influence of intrusive thoughts and mood on the hemodynamic response. The preliminary

results reveal that when an 8 min. stimulation is applied on the PFC, the following brain activity shows an enhanced activation, compared to both the initial part of the session and also compared to the final 30 sec. in the control condition. These within-subject hemodynamic variations confirm the direct physiological impact of the NIR light emitted by the fNIRS device on the PFC, demonstrating immediate and specific neural modulation. Our results show that fNIRS is not a passive recording device but possesses active stimulatory properties. This study fills a fundamental gap in the literature, providing the first robust evidence of activation pattern changes induced by fNIRS.

214. When Thoughts Drift and Notifications Call: Mind Wandering and Digital Distraction

Maria Lidia Mascia¹, Giulia Carlotta Murru², Natale Salvatore Bonfiglio, Maria Pietronilla Penna³

¹ University of Sassari

² Università degli Studi di Torino

³ Università di Cagliari

Poster · Attention, perception and consciousness

Mind wandering (MW) is a complex phenomenon, traditionally defined as an attentional shift encompassing a range of experiences. However, the nature of the relationship between MW presence and difficulties in self-regulation when using mobile devices remains to be explored. For this reason, the main objective of this study is to understand which aspects of this phenomenon are closely associated with high levels of distraction and smartphone overuse. The study involved a sample of 110 healthy participants (mean age = 35.8, SD = 17.7) who were asked to complete the following self-report scales: Smartphone Distraction Scale (SDS), Mind Wandering Spontaneous (MW-S) and Mind Wandering Deliberate (MW-D) Scales, Mobile Phone Problematic Use Scale (MPPUS), and Cognitive Failures Questionnaire (CFQ). Correlation analyses confirmed the multidimensional nature of MW, showing that it is primarily the spontaneous form that is positively associated with overuse ($r=0.53$, $p<.001$) and with distraction caused by incoming notifications ($r=0.59$, $p<.001$). These findings support the hypothesis that certain forms of MW are characterised by a cognitive state marked by reduced executive control, in which other forms of distraction—such as those arising from pervasive mobile phone use—may also develop, thereby revealing potential implications for the development of treatments aimed at mitigating the negative experiences associated with this phenomenon.

215. Two Routes of Temporal Shielding in Working Memory: The Role of Sensory Overlap and Response Uncertainty

Andrea Massironi¹, Joy Geng²

¹ University of Milano-Bicocca, Department of Psychology

² University of California-Davis, Department of Psychology and Center for Mind and Brain

Mini-talk · Memory

Working memory is inherently vulnerable to interference, particularly from external sensory input that demands overt responses (i.e., interrupters). However, when the timing of such input is predictable, it can be anticipated, enabling proactive “shielding” of working memory representations. We investigated the mechanisms underlying temporal shielding and the conditions under which it breaks down. Participants memorized two teardrop-shaped stimuli defined by color and orientation.

During the retention interval, an interrupting stimulus appeared at either a fixed (predictable) or variable (unpredictable) time. Participants then reported one feature of the memorized items in a continuous report task. Across five experiments, we manipulated sensory overlap between memoranda and interrupter, as well as response uncertainty, by varying whether the to-be-reported feature was equally likely to be probed or fully predictable. Results showed that interference operates at the feature level, whereas temporal shielding operates at the object level. Shielding emerged when there was no sensory overlap between memoranda and interrupter, even under high response uncertainty, and when response uncertainty was low, even in the presence of sensory overlap; otherwise, it broke down. This effect persisted even when the interrupter task was unrelated to working memory. Mixture model analyses revealed that, with sensory overlap, temporal predictability improved both memory precision and swap error rates, whereas without overlap, benefits were limited to reductions in swap errors. These findings suggest two distinct temporal shielding mechanisms: one preventing integration of external stimuli with target representations, and another protecting working memory from noise arising from temporal decay or general task demands.

216. Neuroestetica e psicologia dell'arte: emozione, movimento e cultura

Stefano Mastandrea¹, Sabrina Fagioli¹

¹ Università Roma Tre, Dipartimento di Scienze della Formazione

Simposio · Emotions and motivation

Il simposio, “Neuroestetica e psicologia dell'arte tra emozione, movimento e cultura” si inserisce nelle attività del gruppo tematico AIP (Psicologia dell'arte e neuroestetica), costituitosi nel 2022, con lo scopo di favorire la conoscenza e lo scambio tra studiosi che, utilizzando differenti approcci e paradigmi di ricerca, esplorano temi come arte visiva, musica, danza, architettura ecc. L'esperienza estetica, tradizionalmente associata al piacere e al benessere, suggerisce tuttavia una relazione più articolata tra cognizione, emozione, corpo e contesto. Il simposio propone un approccio multilivello, inerente ambiti artistici eterogenei, nel tentativo di integrare neuroscienze, psicologia sperimentale e applicazioni tecnologiche. Un primo contributo presenta risultati di uno studio fMRI che evidenzia come l'esperienza estetica, anche quando elaborata a livello implicito, sia in grado di modulare l'intensità delle emozioni, in particolare quelle negative. Un secondo intervento introduce l'“effetto Michelangelo”, un protocollo di neuroriabilitazione basato sulla realtà virtuale che dimostra come l'interazione con contenuti artistici possa potenziare gli esiti della riabilitazione motoria. Il terzo contributo esplora il ruolo della neuroarchitettura nel modulare stati emotivi e benessere attraverso le caratteristiche dello spazio costruito. Infine, il confronto tra musica occidentale e cinese, con i risultati di due studi (fMRI e EEG) sui giudizi estetici nella musica occidentale e nella musica tradizionale cinese che mostrano come i correlati neurali siano modulati dal contesto culturale. Nel loro insieme, questi contributi suggeriscono che la relazione tra arte, piacere, conoscenza e benessere non è mediata unicamente dall'esperienza di emozioni positive, ma da processi di trasformazione, regolazione e attribuzione di significato dell'esperienza estetica.

217. Heterogeneous but (falsely) remembered: False recognition in natural scene memory

Serena Mastria¹, Vera Ferrari², Maurizio Codispoti¹, Andrea De Cesare¹

¹ Università di Bologna, Dipartimento di Psicologia

² Università di Parma, Dipartimento di Medicina e Chirurgia

Poster · Memory

False recognition refers to memory errors in which novel stimuli are incorrectly identified as previously encountered. In visual memory paradigms, participants are more likely to endorse new images from previously studied categories (related images) as “old” than images from novel categories, an effect thought to reflect reliance on gist-based representations rather than item-specific details. Recognition performance is influenced by encoding conditions, including both the number of exemplars within a category and the number of categories presented. While increasing exemplars per category has been shown to enhance false recognition, it remains unclear whether increasing the number of encoded categories produces a similar effect when exemplar quantity is held constant. In the present study, participants (N = 59) encoded natural scenes drawn from either 9 or 18 categories (small vs. large encoding conditions), with the number of exemplars per category held constant. The total number of encoded images was equated across conditions by adding a filler category that was not further tested. After a 24-hour delay, participants completed a recognition test including old, related, and novel images. Results showed more “old” responses to related than to novel images, indicating a robust false recognition effect. Critically, this effect was not modulated by encoding condition (large vs. small category set). These findings suggest that false recognition for natural scenes is not influenced by the number of encoded categories under these conditions. Future research could further manipulate category set size, encoding strategies, or stimulus characteristics to better understand how encoding variability shapes false visual memory.

218. Differential effects of mindfulness on emotional well-being and attentional processing

Arianna Mastrocresce¹, Sabrina Fagioli¹

¹ Università Roma Tre

Mini-talk · Attention, perception and consciousness

Mindfulness training has been shown to reduce psychological distress and promote interoceptive abilities. Mindful awareness implies focusing on the physical sensations of the present moment in order to attenuate mind wandering and emotional reactivity. Besides the improvement of emotional well-being, the benefits of mindfulness practice include greater flexibility and better attentional control. However, the cognitive-behavioral mechanisms underlying these effects are still unclear. In the present study, 29 subjects were randomly assigned to a 4-week online mindfulness training group or to a control group. The experimental group was required to attend online sessions of mindfulness practice and to engage in daily exercises about body scan and active noticing. Before and after intervention or control condition, participants performed an emotional dot-probe task to evaluate attentional processing of affective information. Self-report questionnaires were also administered to assess changes in psychological well-being and awareness of internal bodily states. Compared to the control condition, mindfulness practice significantly reduced anxious and depressive symptomatology and improved interoceptive awareness skills, but it did not affect behavioral indicators of

attentional bias toward and away from emotional faces in the dot-probe task. Attentional performance was not influenced by the affective content of stimuli at both pre and post intervention. Current preliminary results support preexisting literature, confirming the beneficial effects of mindfulness on psychological well-being and interoceptive awareness. Considering the small sample size and the low internal variability, further investigation is needed to determine the potential impact of mindfulness training on selective emotional attention.

219. Piacere e complessità musicale: il senso del groove nei disturbi da uso di sostanze

Benedetta Matarrelli¹, Elvira Brattico²

¹ Pegaso University, Rome

² Aarhus University

Mini-talk · Language, reading and music

I disturbi da uso di sostanze (DUS) si caratterizzano per un'alterazione del sistema dopaminergico del cervello umano, fondamentale nei processi di piacere, ricompensa e movimento. Lo stesso sistema è coinvolto anche nell'esperienza del groove, ovvero il piacere di muoversi a tempo con la musica, attraverso meccanismi legati all'anticipazione, alla percezione del battito e all'attivazione dei sistemi motori. Somministrando il Test del Groove, abbiamo adottato un paradigma consolidato che descrive una relazione a U rovesciata tra groove e complessità musicale, per indagare come la downregulation dopaminergica dovuta a un uso prolungato di sostanze influenzi l'esperienza musicale. Il campione comprendeva un gruppo sperimentale formato da 19 uomini con dipendenza da cocaina (età media=36.9, DS=10.1) e 16 uomini con dipendenza da cocaina/eroina (età media = 38.5, DS = 8.6), reclutati presso tre sedi della Comunità Terapeutica Emmanuel in Puglia (Lecce, Oria e Triggiano). Il gruppo di controllo, senza DUS, è stato reclutato durante lezioni universitarie e tramite social media. I risultati mostrano che i soggetti con DUS riportano un'esperienza di groove più intensa in risposta a elevata complessità ritmica e armonica, mentre le complessità moderate hanno suscitato risposte simili nei due gruppi. I dati suggeriscono che i pazienti con DUS tendono a ricercare stimolazioni più intense e complesse, a supporto dell'ipotesi secondo cui lo stato ipodopaminergico associato alla dipendenza elevi la soglia necessaria affinché stimoli non farmacologici attivino il sistema della ricompensa.

220. Psychometrics beyond categories and norms: rethinking measurement in the contemporary world

Monica Mazza¹, Caterina Primi², Rosalba Rosato³, Palmira Faraci⁴, Margherita Attanasio⁵

¹ Università degli Studi dell'Aquila, Dipartimento di Scienze Cliniche Applicate e Biotecnologiche

² Università degli Studi di Firenze, Dipartimento di Neuroscienze, Psicologia, Area del Farmaco e Salute del Bambino

³ Università degli Studi di Torino, Dipartimento di Psicologia

⁴ Università Kore di Enna, Facoltà di Scienze dell'Uomo e della Società

⁵ Dipartimento di Scienze Teoriche e Applicate (DiSTA) Università degli Studi e-Campus

Panel · PANEL (no track)

In recent years, psychometrics has undergone a transformation that is not merely methodological, but deeply epistemological. Psychological phenomena—clinical, cognitive, social, and identity-related—are increasingly difficult to reduce to stable categories, shared norms, and linear models. Reality appears

increasingly configurational, dynamic, and context-dependent, challenging the traditional use of constructs, scores, and normative populations. This panel proposes a collective reflection on what it means today to “measure” in psychology, critically examining the role of categories and norms in processes of assessment and decision-making. The discussion will be guided by several key questions: What still makes measurement scientific when its traditional assumptions no longer hold? How can norms and cut-offs be used without turning them into rigid criteria? How can psychological functioning be represented when it takes the form of a process, a network, or a trajectory? The panel brings together speakers with complementary expertise, capable of offering a multidimensional comparison across theoretical, methodological, and clinical approaches. It will foster dialogue between classical psychometric perspectives and more recent developments in measurement models, highlighting their limits, implicit assumptions, and possibilities for integration (Caterina Primi, Rosalba Rosato, Palmira Faraci). The session will also address challenges related to the development of inclusive tools in clinical settings, considering the role of neurodiversity and atypical functioning as a testing ground for non-categorical models (Monica Mazza, Margherita Attanasio). Through a dynamic discussion, the panel aims to explore the possibilities of a psychometrics capable of maintaining methodological rigor without reducing the complexity of reality.

221. Combined transcutaneous spinal direct current stimulation and exercise therapy reduces anxiety-related symptom severity in fibromyalgia: Evidence from a prospective randomized study

Denise Mellace¹, Daniele Saccenti¹, Angelica De Sandi², Giorgia Boboni², Maurizio Vergari², Eleonora Zirone², Filippo Cogiamanian², Alberto Priori³, Roberta Ferrucci⁴

¹ Department of Oncology and Hemato-Oncology, University of Milan, Milan, Italy

² Department of Neuroscience and Mental Health, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

³ Department of Health Sciences, University of Milan, Milan, Italy; ASST Santi Paolo e Carlo, San Paolo Hospital, Milan, Italy

⁴ Department of Oncology and Hemato-Oncology, University of Milan, Milan, Italy; Department of Neuroscience and Mental Health, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

Poster · Health, sport and wellbeing

Chronic pain syndromes such as fibromyalgia have been associated with worsen health-related quality of life and increased incidence of comorbid psychiatric disorders, underscoring the need for targeted interventions. Transcutaneous spinal direct current stimulation (tsDCS) and exercise therapy (ET) have been identified as promising non-pharmacological tools due to their capacity to inhibit pain transmission. However, empirical evidence regarding a combined efficacy remains limited. The aim of this work was, therefore, to test the effects of a multimodal treatment protocol on fibromyalgia-related symptoms severity. Forty-five patients with fibromyalgia were recruited and randomly assigned to the tsDCS, ET, or combined tsDCS + ET group for a three-week period. Participants were assessed at baseline, one week after the start of treatment, at the end of the treatment (T2), and at 3-month follow-up (T3) using the Visual Analogue Scale (VAS), Brief Pain Inventory (BPI), Short Form Health Survey (SF-12), and Hospital Anxiety and Depression Scale (HADS). Analysis of variance applied to linear mixed effect models show significant group-by-time interaction effects on both HADS domains (anxiety: $p = 0.004$; depression: $p = 0.028$). Post-hoc pairwise

comparisons highlighted that tsDCS + ET decreased subjects' anxiety at both T2 ($p = 0.002$) and T3 ($p < 0.001$) compared to baseline. Yet, significant comparisons were not found for depression. No significant interactions were detected on VAS, BPI, and SF-12 scores. Although between-group differences were not observed, the integration of neuromodulation with physical activity resulted in a significant improvement in patients' anxiety-related symptoms severity, suggesting a potential synergistic effect.

222. Traditional and Immersive Virtual Reality Administrations of the Corsi Block Tapping Test: Findings from Two Experimental Studies

Carla Meloni¹, Giada Corrias², Stefano Curatti², Franco Delogu³, Rachele Fanari¹

¹ University of Cagliari

² Infora Soc. Coop, Cagliari, Italy

³ Department of Humanities, Social Sciences and Communication, Lawrence Technological University, Southfield, MI, United States

Poster · Memory

The Corsi Block Tapping Test (CBTT) is a standard nonverbal measure of visuospatial working memory. While digital versions have improved standardization and measurement precision, most rely on two-dimensional displays, limiting depth cues and spatial realism. Immersive virtual reality (iVR) offers three-dimensional environments that may enhance ecological validity; however, the equivalence between iVR-based and traditional CBTT administration remains to be empirically established. The present work describes the development and validation of two immersive CBTT applications administered via head-mounted display (HMD): iCorsi, a direct replication of the standard CBTT, and iCorsi-Birds, a gamified immersive variant. Two experimental studies were conducted to assess performance comparability between traditional and iVR-based administrations. In Study 1, seventy university students completed both the traditional physical CBTT and the iCorsi in a within-subjects design. Performance scores were compared across modalities to evaluate administration effects. Results revealed no significant differences between the traditional and immersive versions. In Study 2, forty university students completed the traditional CBTT and the gamified immersive version, iCorsi-Birds. Analyses examined whether immersion and gamification affected visuospatial working memory performance. No significant differences were observed between the traditional and iVR gamified conditions. Overall, these findings provide preliminary experimental evidence supporting the equivalence of immersive VR-based and traditional CBTT administrations. The results suggest that immersive VR, including gamified implementations, can be integrated into visuospatial working memory assessment without compromising measurement validity, potentially increasing engagement and ecological relevance for research and clinical applications.

223. Where is ADHD in the brain? Evidence for a neurodevelopmental continuum of brain dynamics

Giovanni Mento¹, Giulia Stefanelli¹, Fiorella De Popolo Cristaldi¹, Lisa Toffoli¹, Alberto Danieli², Federica Martinez², Vincenza Tarantino³, Gian Marco Duma²

¹ NeuroDev Lab, Department of General Psychology, University of Padova, Padova, Italy

² Scientific Institute IRCCS E. Medea, Conegliano (TV), Italy

³ University of Palermo

Mini-talk · Life cycle (e.g., development and aging)

Attention-deficit/hyperactivity disorder (ADHD) has traditionally been conceptualised categorically, with efforts to identify disorder-specific neurobiological endophenotypes. However, dimensional models suggest that brain-behaviour organisation may follow developmental axes that cut across diagnostic boundaries. We tested whether neural dynamics and cortical excitability differentiate those with ADHD diagnoses from typically developing (TD) peers, and whether brain-behaviour covariance aligns with diagnostic or developmental dimensions. We studied 84 participants aged 8–17 years (51 ADHD, 33 TD). High-density electrophysiological (hdEEG) measures included task-free source-resolved data used to derive mean global brain fluidity (variance of dynamic functional connectivity) and region-specific cortical excitability. Behavioural measures included self- and parent-report questionnaires, cognitive control (CC) tasks, and neuropsychological tests. Partial least squares (PLS) assessed multivariate brain-behaviour associations including age, followed by clustering based on latent component scores. Group differences emerged in parent-report questionnaires and CC tasks, but not in neuropsychological measures. ADHD individuals showed higher mean global brain fluidity and increased cortical excitability. The excitability-fluidity relationship was network-dependent: higher excitability predicted higher fluidity in task-positive networks and lower fluidity in default-mode and salience networks, with no group effects. PLS identified a latent dimension linking neural metrics with age, verbal fluency, inhibitory control, and positive affect, but it did not distinguish ADHD from TD. Clustering revealed two neurodevelopmental profiles spanning both groups. While ADHD is associated with mean-level differences in neural dynamics, brain-behaviour organisation follows a developmental neurocognitive-affective axis that transcends the diagnostic boundary. These findings support a dimensional framework for understanding neurobiological variation in neurodevelopmental conditions.

224. Temporal Representation: from durations to patterns.

Luigi Micillo¹, Chiara Zanonato²

¹ Dipartimento di Psicologia Generale, Università di Padova

² Max-Planck-Institute for Biological Cybernetics, 72076, Tübingen, Germany

Simposio · Space, time and number

Time continuously shapes human perceptual and motor experience. Despite being central for cognition, it's still unclear how different forms of temporal representation are computed and integrated. Temporal processing is not unitary, but rather spans multiple mechanisms and timescales, including duration estimation, temporal attention, rhythmic and sensorimotor timing, and multisensory temporal integration. This symposium brings together complementary perspectives on temporal processing, highlighting the plethora of mechanisms that support the perception and use of temporal structure. Rather than adhering to a single theoretical framework, it emphasizes how different levels of temporal representation contribute to behavior and how they may interact across contexts. The first contribution investigates how temporal intervals are processed both implicitly and explicitly across young and older adults, combining behavioral and EEG evidence. The second, then, will focus on the implicit processing of time, showing how it can guide perception even in the absence of awareness or of explicit strategic use of temporal regularities. The symposium

further explores how complex temporal patterns can be learned beyond rhythmic structure, highlighting domain-general mechanisms involved in the acquisition of weakly predictable temporal regularities. Finally, multisensory temporal integration in vision is examined, focusing on how neural dynamics shape the resolution and stability of temporal perception. Together, these studies provide evidence that temporal processing emerges from the interaction of multiple specialized but interconnected mechanisms. By integrating findings across different levels of representation, this symposium aims to present a more comprehensive understanding of how the brain encodes, predicts, and exploits temporal structure to support adaptive behavior.

225. Seeing art beyond the artist: behavioral and eye-tracking evidence on Ai-Generated images and human artworks

Simone Migliore¹, Gianmarco Carella¹, Ilaria Di Pompeo¹, Daniele Lozzi¹, Giorgia Capitani¹, Michela Alemanno¹, Martina Marcaccio¹, Giuseppe Curcio¹

¹ University of L'Aquila

Mini-talk · Reasoning and abstract cognition

Recent advances in generative artificial intelligence (AI) have enabled the production of highly realistic artistic images, raising fundamental questions about aesthetic perception and authorship. The present study investigates whether observers can distinguish between human- and AI-generated artworks and how this distinction influences aesthetic evaluation, considering the role of expertise. Fifty participants were divided into three groups based on artistic expertise: non-experts, art students, and art professors. Participants completed two computerized tasks: 1) they rated artworks (human vs. AI-generated) on pleasantness, engagement, and familiarity without being informed of their origin; 2) they classified each artwork as human- or AI-generated. Eye movements were recorded throughout both tasks. Behavioral results revealed statistically significant interactions between image type and expertise. Non-experts showed higher pleasantness and engagement ($p < .001$) ratings for AI-generated images compared to human artworks, whereas experts exhibited a more differentiated evaluation pattern. Familiarity ratings were generally higher among experts ($p < .009$) and for human artworks ($p < .001$). In the classification task, participants across all groups demonstrated limited ability to accurately distinguish AI from human art, with better performance for human images ($p < .001$). Eye-tracking analyses showed that expertise modulated visual exploration patterns. Non-experts produced fewer fixations than art students ($p = .026$), indicating reduced visual sampling. Art professors exhibited significantly longer saccade durations compared to non-experts ($p = .028$), suggesting broader attentional shifts. Moreover, pupil dilation was significantly reduced in experts relative to both non-experts and students, consistent with greater processing efficiency. In the second task, art students generated more fixations than non-experts ($p = .041$), reflecting more detailed inspection during categorization. These findings highlight how expertise shapes both overt evaluation and implicit visual processing in AI-generated art.

226. Contrasting Exploratory Structural Equation Modeling (ESEM) and Bayesian Structural Equation Modeling (BSEM) in Structural Parameter Estimation

Giuseppe Mignemi¹, Rossella Bottaro², Palmira Faraci²

¹ Università Kore, Dipartimento di Scienze Umane e Sociali

² Università Kore, Dipartimento di Scienze dell'Uomo e della Società

Mini-talk · Methodology

The extant literature on the analysis of the psychometric characteristics of psychological measures reveals that various assessment instruments often reveal inconsistent factorial structures and limited evidence to support discriminant and predictive validity. Traditional confirmatory factor analysis (CFA) models frequently fail to meet the established standard criteria for goodness of fit, measurement invariance, and factor definition, even for seemingly robust multidimensional instruments. Simulation studies with known population parameters have shown that CFA models are likely to introduce biases into parameter estimates in the presence of specification errors. These biases typically manifest in the form of inflated loadings and factor correlations, as well as reduced factor discrimination. When cross-loadings are constrained to zero in estimation models, no dynamic interaction between factors can be captured. Consequently, there is a high probability of a discrepancy between the conceptual formulation of the construct and the psychometric estimation. Therefore, we need the application of more realistic and flexible approaches in the field of scale validation. To address the methodological challenges related to these issues, we need approaches that can renew, expand, and enhance the validation process of measurement instruments. Exploratory structural equation modeling (ESEM; Asparouhov & Muthén, 2009) and Bayesian structural equation modeling (BSEM; Muthén & Asparouhov, 2012) are promising alternatives that combine the best features of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Considering the ongoing advancement and refinement of these methodological strategies, and the complexity of applying the relevant procedures, the objective of this presentation is twofold: firstly, to provide a brief overview of ESEM and BSEM; b) and secondly, to present illustrative examples of empirical research and simulation study results comparing ESEM and BSEM models. Unlike in other existing comparison between ESEM and BSEM, (e.g., Wei et al., 2022), we furthermore investigate the performance of BSEM with shrinkage priors on cross-loadings (van Erp, 2023). ESEMs have been developed to overcome the limitations of EFA and CFA by providing a compromise between the iterative, data-driven approach and the restrictive, theory-driven approach. The ESEM analytical approach aims to explain the dimensional complexity of items. In essence, ESEM provides a framework for analysing factor structures that can account for the factorial complexity of items due to their natural fallibility. One interesting option is target rotation, which enables the application of ESEM from a confirmatory perspective as well. Cross-loadings are allowed; however, they are constrained to be zero-targeted. This means it is possible to specify assumptions concerning the postulated factorial structure (i.e., patterns of non-zero and approximately zero loadings) from a confirmatory perspective while allow zero-targeted cross-loadings to deviate from zero when the initial null specification appears to be unsuitable.

227. Task-Set Inhibition in Late Childhood: Behavioural Evidence from Two Switching Paradigms

Rebecca Minafra¹, Pierpaolo Zivi¹, Stefano Sdoia¹

¹ Sapienza Università di Roma. Dipartimento di Psicologia

Poster · Reasoning and abstract cognition

Cognitive flexibility, inhibitory control, and working memory follow prolonged developmental trajectories that are not yet fully understood. Studies using sequential task-switching paradigms have revealed higher reaction times and reduced accuracy when participants perform a recently abandoned task (e.g., task A in an ABA sequence) compared to a less recently abandoned one (e.g., task A in a CBA). This difference, measured in terms of n-2 repetition cost, seems to reflect a high-level form of inhibition. Given the protracted maturation of inhibitory capacities, we hypothesised that this cost is reduced or absent in school-age children. Considering the limited ecological validity of task-switching paradigms, we used a card sorting paradigm to investigate whether this mechanism influences rule selection under uncertain conditions, as suggested by a previous study involving young adults. Sixteen participants aged between 9 and 10 completed two paradigms. In the cued task-switching, they switched through three tasks according to a given cue, while in the card sorting, they had to identify the correct sorting rule through trial-and-error feedback. Preliminary results revealed no significant differences in RTs between ABA and CBA sequences, nor any interaction effect between task type and sequence. Similarly, no recency effect emerged in the card sorting, suggesting that participants did not base rule selection on recency, regardless of working memory capacity. These preliminary findings suggest that task-set inhibition has not yet reached full maturity by the end of primary school. Further research should examine broader age ranges to map this developmental trajectory and its role in goal-directed behaviour.

228. Rigeneratività percepita ed emozioni in contesti storico-religiosi: il ruolo di fattori contestuali e individuali

Laura Miola¹, Francesca Pazzaglia¹

¹ Università di Padova, Dipartimento di Psicologia Generale (DPG)

Poster · Emotions and motivation

Lo studio ha esaminato se due visite guidate in contesti storici e religiosi: il sito archeologico di Aquileia e l'Abbazia benedettina di Praglia, influenzino la percezione di rigeneratività e gli stati emotivi dei visitatori (valenza e arousal). I partecipanti (N = 149; 72 presso Praglia e 77 presso Aquileia) hanno completato questionari prima e dopo una visita guidata di 45 minuti, che misuravano caratteristiche demografiche, religiosità, connessione con la natura, livelli di stress, risposte emotive e rigeneratività percepita. Inoltre, è stata valutata la significatività dell'esperienza, intesa come la valutazione dei partecipanti di specifiche qualità del contesto e della visita, in particolare gli aspetti naturali, storici, artistici e religiosi. I risultati hanno mostrato un aumento della valenza emotiva dopo la visita in entrambe le località. I livelli di arousal sono rimasti stabili a Praglia, mentre sono aumentati ad Aquileia. La rigeneratività percepita è risultata positivamente associata all'importanza attribuita alla visita dai partecipanti, in particolare al valore artistico, culturale e storico in entrambi i siti, oltre che a differenze individuali, tra cui la connessione con la natura (ad Aquileia) e lo stress percepito (a Praglia). I risultati indicano che

le visite guidate in siti storici e religiosi immersi in contesti naturali possono favorire emozioni positive, con differenze nell'arousal a seconda del sito. La rigeneratività sembra dipendere non solo dal significato culturale e storico dell'esperienza, ma anche da caratteristiche personali come la connessione con la natura e i livelli di stress, sottolineando l'influenza combinata di fattori contestuali e individuali nello spiegare benefici rigenerativi.

229. Belli ma non credibili: affidabilità e rilevazione di artificialità nei volti generati da IA

Giovanna Mioni¹, Anna Doati Guerriero², Simone Cutini², Alberto Testolin¹

¹ Dipartimento di Psicologia Generale

² Dipartimento di Psicologia dello Sviluppo e della Socializzazione

Poster · Social cognition

La percezione dell'affidabilità dei volti rappresenta un tema cruciale, soprattutto in un contesto in cui l'intelligenza artificiale (IA) consente la generazione di volti fotorealistici sempre più difficilmente distinguibili da quelli reali. L'obiettivo del presente studio è indagare le differenze nella valutazione di affidabilità tra volti generati da IA e volti umani. Sono stati generati volti sintetici sufficientemente realistici tramite modelli di IA generativa, ed è stato selezionato un insieme equivalente di volti umani provenienti dal database standardizzato "FACES". I due set sono stati bilanciati per numero, genere e caratteristiche morfologiche generali. I partecipanti hanno visualizzato 40 volti presentati in ordine randomizzato e, per ciascun volto, hanno espresso una valutazione continua su due dimensioni: affidabilità percepita e artificialità, mediante l'utilizzo di uno slider. Sono stati testati 150 partecipanti di età compresa tra 18 e 30 anni attraverso la piattaforma online Prolific. I risultati indicano che i partecipanti sono in grado di discriminare ragionevolmente tra volti generati da IA e volti reali, e allo stesso tempo mostrano una tendenza sistematica a valutare i volti reali come più affidabili. Questo effetto emerge nonostante i volti sintetici presentino caratteristiche percettive potenzialmente associate a maggiore attrattività, come una maggiore simmetria facciale. Alla luce di questi risultati, si propone che future ricerche includano misure esplicite di attrattività percepita, al fine di esplorare una possibile dissociazione tra attrattività, affidabilità e rilevazione di artificialità. Tale dissociazione potrebbe contribuire a chiarire i meccanismi percettivi e decisionali alla base del giudizio sociale dei volti in contesti sia reali che sintetici.

230. "Dr. Bayes": A Psychometric Chatbot Powered by LLMs to Facilitate Learning of Bayesian Diagnostic Reasoning in Mental Health

Claudia Mirenghi¹, Andrea Bosco¹, Antonella Lopez²

¹ Università degli Studi di Bari Aldo Moro

² Università degli Studi del Molise

Mini-talk · Methodology

The increasing use of AI-based chatbots in higher education has highlighted their potential when used as cognitive tutors, particularly when designed to support metacognitive processes rather than simply provide correct answers. At the same time, research in cognitive psychology suggests that learning benefits from engaging with errors, yet most AI systems are optimized to minimise them. This pilot feasibility study aims to investigate the implementation of an error-friendly AI-based cognitive tutor "Dr. Bayes" designed to support Bayesian diagnostic reasoning in psychometric assessment through

structured metacognitive prompting. A within-subjects design was employed with master's students in clinical psychology (N = 16). Participants engaged in two chatbot-assisted problem-solving sessions involving diagnostic and Bayesian reasoning tasks. The tutor required students to articulate intermediate steps, reflect on errors, and revise their reasoning without receiving direct solutions. Feasibility outcomes included recruitment, completion rates, and questionnaire burden, while secondary outcomes assessed usability, user experience, user satisfaction, and changes in error rates. Results indicated good feasibility, with a 60% recruitment rate, 81% session completion, and full questionnaire completion. Usability and user experience were consistently high across sessions. Notably, problem-solving errors decreased substantially (62%), with Bayesian analyses providing strong evidence for improvement ($BF_{10} = 19.1$), while baseline attitudes remained stable. Overall, the findings suggest that an error-oriented cognitive tutor is feasible to implement and it is associated with reduced errors in a repeated practice context. These preliminary results inform the refinement of the system and its future evaluation in larger-scale studies.

231. Blunted appetitive stimuli processing in depression vulnerability: an ERPs study

Valentina Mogni¹, Gaia Alessandra Di Carlo², Carola Dell'Acqua², Simone Messerotti Benvenuti³

¹ Università di Padova

² Università di Padova, Dipartimento di Psicologia Generale

³ Università di Padova, Dipartimento di Psicologia Generale & Padova Neuroscience Center

Poster · Emotions and motivation

Depression is a pervasive condition, making the early identification of individuals at risk a critical priority. One mechanism possibly implicated in the etiopathogenesis of depression is a blunted activation of the Positive and Negative Valence Systems, leading to a reduced elaboration of emotional stimuli. However, specific impairments related to different emotional processing stages, anticipation and elaboration, remains relatively unexplored. The primary aim of this study was to investigate distinct phases of emotional responses as potential psychophysiological correlates of depression vulnerability. Specifically, young adults with a family history of depression (n = 23, 19 F), subclinical depressive symptoms (n = 39, 25 F), and healthy controls (n = 30, 19 F) were included. All participants underwent an electroencephalography (EEG) recording during an S1–S2 task, in which a cue (S1) predicted the valence of an upcoming emotional picture (S2; pleasant, neutral, unpleasant). Emotional anticipation was indexed through the Cue-P300, and stimulus elaboration through the P300/LPP complex. Results showed that both at-risk groups exhibited reduced Cue-P300 amplitudes for pleasant and unpleasant cues relative to controls, indicating diminished preparatory allocation of attentional resources to upcoming emotional events. During image processing, both at-risk groups exhibited reduced P300/LPP amplitudes to pleasant, but not unpleasant, stimuli compared to controls. Together, these findings reveal that depression vulnerability is associated with blunted emotional anticipation and a selective reduction in motivated attention to positive stimuli. These results have important implications for the early identification and the design of prevention protocols.

232. A neuroaesthetic perspective on visual and auditory stimulation to enhance motivation and engagement in rehabilitation

Marta Mondellini¹, Vera Colombo², Fidan Ezgi Arar², Maria Rosa Miccoli², Lucia Cavallasca³, Alessandro Antonietti⁴

¹ Consiglio Nazionale delle Ricerche - STIIMA, Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

² Consiglio Nazionale delle Ricerche - STIIMA

³ Università degli Studi di Padova, Dipartimento di Psicologia

⁴ Università Cattolica del Sacro Cuore di Milano, Dipartimento di Psicologia

Intervento in simposio · Emotions and motivation

Motivation and engagement are key determinants of adherence in rehabilitation. Neuroaesthetics provides a useful framework for investigating how stimuli's features of therapeutic environments shape affective responses. This contribution presents experimental evidence on the role of aesthetic visual environments and rhythmic auditory stimulation in enhancing experience during rehabilitation oriented tasks in healthy participants, with the aim of deriving practical insights for clinical application. In a first study, participants explored immersive virtual museum environments differing in aesthetic quality (pleasant vs unpleasant) using Oculus VR. Eighty one participants completed a within subjects visual search task. Measures included user engagement, motivation toward exercise, emotional valence, arousal, game experience, and task performance. Results showed higher engagement in the unpleasant environment, possibly due to increased cognitive challenge, while significantly more targets were identified in the pleasant environment, suggesting that aesthetic quality facilitates performance efficiency. Order effects indicated learning and increased perceived competence. In a second study, 51 healthy participants performed two exergames on a cycle ergometer under two auditory conditions (adaptive self-selected music vs. metronomic rhythm) in a within-subjects design. Adaptive music enhanced engagement, intrinsic motivation, and emotional valence, while perceived exertion remained comparable. Performance patterns differed across exergames, with music supporting constant rhythm tasks and metronomic cues proving more functional during tasks with frequent speed changes. Qualitative comments corroborated these patterns. Overall, these findings suggest that neuroaesthetically informed visual and auditory stimulation can be leveraged as assistive tools in rehabilitation, supporting patient motivation and engagement without increasing physical burden.

233. Contextual adaptation of bilingual language control

Luca Moretti¹, Elena Benini², Simone Sulpizio³, Tanja Römbke⁴, Giacomo Spinelli⁵

¹ University of Milano-Bicocca, Department of Psychology

² University of Lausanne, Institute of Psychology, Lausanne

³ University of Milano-Bicocca, Psychology Department

⁴ RWTH Aachen University, Department of Psychology

⁵ University of Zürich, Institute of Psychology

Poster · Language, reading and music

Introduction: Bilinguals activate both their L1 and L2 while speaking and thus need to control the language not in use. A proof of this is that cognate words (e.g., BABY/BABY in German and English) are named more easily than non-cognates in L2. Although much research has characterized such cognate-facilitation effect, whether bilingual control depends on contextual demands, remains unclear. To address this issue, two recent studies manipulated contextual demands

by varying the proportion of cognates across blocks during an L2 picture-naming task. While one study reported larger cognate facilitation in majority-cognate (MC) blocks, indicating control relaxation compared to majority non-cognate (MNC) blocks, the other observed an additive pattern. Because the latter did not explicitly instruct the proportion manipulation, used non-identical cognates, and required spoken (instead of written) responses, the present study aimed at testing which of these factors prevent bilingual-control modulations. Methods: German natives performed a written picture-naming task in L2 (English). Experiment 1 was identical to the study reporting the proportion-cognate effect, except that the proportion-cognate manipulation was not explicitly instructed. Experiment 2 was identical to Experiment 1, except that cognates were orthographically not identical (e.g., HONIG/HONEY, instead of BABY/BABY). Results: In both experiments, cognate facilitation was larger in MC than MNC blocks, replicating the proportion-cognate effect. Conclusions: We conclude that contextual demands modulate bilingual control in written production, irrespective of instructions or cognate similarity. The null result previously reported likely emerged from the employment of spoken responses, suggesting that bilingual-control modulation depends on the output modality.

234. HEXACO traits, facets, and demographics as predictors of Internet addiction in middle school students

Francesca Mottola¹, Augusto Gnisci², Marco Perugini³, Vincenzo Paolo Senese², Ida Sergi²

¹ Department of Psychology, University of Campania Luigi Vanvitelli

² Department of Psychology, University of Campania Luigi Vanvitelli

³ Department of Psychology, University of Milan-Bicocca

Mini-talk · Life cycle (e.g., development and aging)

This study examined whether HEXACO personality traits and their underlying aspects (i.e., facets) are associated with Internet addiction in middle school students, controlling for sex and grade. Lower Honesty–Humility, Agreeableness, and Conscientiousness, particularly sincerity, fairness, forgiveness, patience, prudence, diligence, and organization, were hypothesized to predict higher Internet addiction. Participants were 240 students (51.2% girls) aged 10–14 years ($M = 12.06$, $SD = 0.91$), who completed the HEXACO-MSI-E and the Internet Addiction Test. Two hierarchical multiple regressions, independently for traits and facets, were executed. As hypothesized, lower Honesty–Humility, Agreeableness, and Conscientiousness predicted higher Internet addiction (β s = $-.15$ to $-.28$, $ps < .05$). Lower Extraversion ($\beta = -.17$, $p < .01$) and higher Emotionality ($\beta = .12$, $p < .05$) were also significant predictors, whereas Openness to Experience was not associated. Controlling for sex and grade did not increase explained variance ($\Delta R^2 = .014$, $p = .065$), and trait effects remained stable. Consistent with the hypotheses, lower Sincerity, Fairness, Patience, Diligence, and Organization predicted higher Internet addiction (β s = $-.14$ to $-.26$, $ps < .05$). Lower Fearfulness and Social Boldness (β s = $-.18$ to $-.21$, $ps < .05$), and higher Sentimentality ($\beta = .14$, $p < .05$) also predicted greater Internet addiction. Controlling for sex and grade did not improve model fit ($\Delta R^2 = .007$, $p = .218$), and facet associations remained stable. Overall, lower self-regulatory and fairness-related HEXACO traits and facets are associated with higher Internet addiction, independent of demographics, highlighting personality's role in Internet addiction risk.

235. Linking spatial representation to action: Motor evidence from real and imagined pointing

Veronica Muffato¹, Sonia Betti¹, Luisa Sartori¹, Chiara Meneghetti¹

¹ University of Padova, Department of General Psychology

Intervento in simposio · Action and movement

Spatial cognition is linked to bodily action, as the way we move may reflect how we mentally represent space. We aimed to investigate the embodied nature of spatial representations by examining how motor processes support the flexible representation of familiar environments. Therefore, we investigated the kinematics of pointing movements (Study 1) and motor cortex activity during imagined pointing (Study 2) considering the role of gender and alignment effects. In Study 1, participants pointed toward familiar locations while their body orientation was either aligned or counter-aligned with the target. Index finger movements were recorded with a 3D motion capture system. Results showed alignment effects with counter-aligned conditions producing slower movements. While spatial accuracy did not differ by gender, small differences emerged in motor execution, with men producing slightly faster movements and larger displacement. In Study 2, participants imagined pointing toward aligned or counter-aligned locations in a familiar environment while transcranial magnetic stimulation (TMS) was applied. Corticospinal excitability was significantly higher for counter-aligned targets, indicating greater motor system engagement when spatial transformation demands increased, with no gender differences. Together, these findings provide converging behavioral and neurophysiological evidence that spatial representations are tightly embodied in motor processes.

236. Space, cognition and action: Theoretical and methodological perspectives on embodiment

Veronica Muffato¹, Sonia Betti²

¹ Dipartimento di Psicologia Generale

² Università degli Studi di Padova, Dipartimento di Psicologia Generale

Simposio · Action and movement

The present symposium adopts an embodied perspective and aims to provide new theoretical and methodological evidence that spatial representations are not merely cognitive, but emerge from the dynamic interplay between the body and action across development and contexts. The first contribution shows that spatial representations of object location are influenced by action-related properties, such as direction of use and type of grasp, suggesting that the body can act both as a reference point and as a target of action. Consistently, the second contribution provides evidence that spatial representations are modulated by body orientation. Using motion tracking and transcranial magnetic stimulation, it highlights greater motor involvement when real or imagined pointing requires spatial transformations. The third contribution extends embodiment to spatial deductive reasoning, showing that action observation modulates reasoning speed as a function of kinematic properties and associated effort, supporting the involvement of motor resources in constructing spatial models. The fourth contribution provides evidence of the development of spatial representations, showing that newborns are equipped to perceive multisensory peripersonal space and build predictive representations. Finally, the fifth contribution shows that spatial representations are plastic and shaped by practice. Compassion meditation reduces interpersonal distance, suggesting changes in self-other representation even

without direct interaction. Overall, the symposium presents converging evidence that spatial representation and cognition are grounded in action systems and dynamically shaped by bodily experience.

N

237. Being Active in Aging Without Forgetting Safety: A Multiple Single-Case Study on Reducing Risky Walking Behaviors in Older Adults

Rosa Napoletano¹, Elisabetta Ricciardi², Claudia Mirengi¹, Sergio Traficante¹, Luigi Tinella³, Alessandro Oronzo Caffò¹, Giuseppina Spano³, Antonella Lopez⁴, Andrea Bosco¹

¹ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

² Università degli Studi di Bari Aldo Moro, Dipartimento di Medicina di Precisione e Rigenerativa e Area Jonica

³ Università Pegaso, Dipartimento di Psicologia e Scienze della Salute

⁴ Università degli Studi del Molise, Dipartimento di Scienze Umanistiche, Sociali e della Formazione

Mini-talk · Life cycle (e.g., development and aging)

Walking activity is essential for preserving autonomy and participation in later life. However, age-related cognitive, sensory, and physical changes may increase the risk of unsafe pedestrian behaviors. Risky pedestrian behavior in real-world contexts is still underexplored. The present study evaluated the preliminary effectiveness of STEP (Safe Training for Everyday Pedestrian behavior), an ecological training conducted in real environments and including immediate feedback during walking sessions, aimed to reduce risky walking behaviors in older adults. A single-case ABAB design was conducted with four community-dwelling older adults. Violations and errors were assessed through direct observation using a behavioral checklist, and phase differences were examined through visual inspection and Bayesian bootstrap procedures. Changes in self-reported walking behavior were evaluated at pre-, post-, and follow-up using a self-report measure, with smoothed bootstrap confidence intervals used to evaluate changes over time. All participants showed immediate reductions in observed violations and errors after the introduction of the training, although the stability of improvements varied across individuals during withdrawal phases. In contrast, self-reported walking behavior did not show consistent changes over time. Participants reported moderate satisfaction with the training, indicating overall good acceptance. These findings provide preliminary evidence that ecological training, including real time feedback, may improve observable pedestrian safety in older adults. Further research with larger samples is needed to confirm the effectiveness and generalizability of the intervention.

238. An investigation into the dynamics of eye movements in the context of face recognition: forensic applications

Ottavia Nardiello¹, Andrea Zangrossi²

¹ Università degli Studi Padova, Dipartimento di Psicologia Generale

² Università degli Studi di Padova, Dept. of Philosophy, Sociology, Education and Applied Psychology (FISPPA)

Intervento in simposio · Attention, perception and consciousness

Facial recognition by eyewitnesses is flawed: over 70% of convictions based on eyewitness testimony have been overturned by DNA testing. In the forensic context, eyewitnesses are exposed to dynamic and emotionally charged

scenes. Literature suggests that eye movements emerge as implicit indicators of recognition, even in the absence of explicit verbal responses. This study aims to replicate these conditions in the laboratory, manipulating stimulus dynamics during the learning phase (photo vs. video) and the emotional content of the scene during the task phase (neutral, mild, moderate, or high), evaluating participants' performance in a facial recognition task. Eye movements were recorded using a Tobii Pro Spectrum 600 (600 Hz) during the task; additionally, the NEO-FFI, DASS-21, and BIS-BAS were administered to a sample of 54 participants. The results indicate significant effects of stimulus type ($\chi^2[3]=9.32$; $p=0.025$), emotional content ($\chi^2[9]=32.7$; $p<0.001$), and their interaction ($\chi^2[9]=22.18$; $p=0.008$) on performance. In particular, performance in the recognition task was higher, in terms of correct responses, following exposure to video material in the mild and moderate emotional conditions. The BIS negatively predicted false recognitions ($\beta=-1.40$; $p=0.004$), while the BAS-Fun Seeking positively predicted them ($\beta=1.46$; $p=0.03$). Fixation duration ($\chi^2[3]=19.53$; $p<0.001$) and the number of saccades ($\chi^2[3]=19.27$; $p<0.001$) significantly predicted response type. Overall, this work highlights the potential of eye movements as indicators of recognition and offers methodological insights for future studies.

239. Sleep and spontaneous brain activity in healthy ageing.

Ottavia Nardiello¹, Andrea Zangrossi², Martina Comper³, Nicola Cellini¹, Giovanna Mioni⁴

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

² Università degli Studi di Padova e Dept. of Philosophy, Sociology, Education and Applied Psychology (FISPPA)

³ Università degli Studi di Padova, Dipartimento Psicologia Generale

⁴ Università degli Studi di Padova, Dipartimento di Psicologia Generale

Poster · Life cycle (e.g., development and aging)

Aging is associated with changes in brain structure, function, and behaviour, including slower neuronal activity and a decline in sleep quality, both of which can negatively affect daily functioning and overall quality of life. Literature suggests that specific patterns of brain activity, together with sleep disturbances, may serve as early biomarkers of cognitive decline and risk of neurodegenerative disorders (e.g., dementia). In this context, the present study investigates the relationship between resting-state electroencephalographic (EEG) activity and subjective sleep quality, as assessed by the Pittsburgh Sleep Quality Index (PSQI). Resting-state EEG activity and sleep quality were evaluated in a sample of 22 healthy older adults aged 65 years or older. EEG signals were recorded using a 128-channel high-density EEG system. The results indicate that sleep quality is associated with specific patterns of brain activity and might contribute to the identification of early markers of cognitive decline. Although no statistically significant correlations were found for the global PSQI score, our results show that the subcomponents of the PSQI might be related to specific patterns of brain activity. For instance, higher beta-band power is linked to better sleep quality. Significant associations were also observed for sleep medication use, which was positively related to age and delta-band power, and negatively related to theta-band power. Increased delta activity is consistent with poorer sleep quality and sleep deprivation, whereas increased theta activity appears to reflect more efficient sleep initiation. Overall, these findings support the relevance of EEG sleep-related markers in ageing research.

240. Beyond burden: Meaning, goals, resilience and quality of life in family caregivers of children and adolescents with disabilities

Luca Negri¹, Raffaella Daria Giovanna Sartori², Gianna Piazza³, Marta Bassi⁴, Antonella Delle Fave¹

¹ Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Università degli Studi di Milano

² Dipartimento di Oncologia, S.C. Oncologia, Ospedale Luigi Sacco

³ IRCCS Eugenio Medea – La Nostra Famiglia

⁴ Dipartimento di Scienze Biomediche e Cliniche, Università degli Studi di Milano

Intervento in simposio · Life cycle (e.g., development and aging)

Family caregivers are key resources contributing to the psychosocial well-being of persons with chronic diseases. Related research, however, is primarily focused on caregiving burden, overlooking their psychosocial assets, growth orientation, and positive quality of life components. This mixed-method study was aimed at jointly investigating perceived burden, resilience and quality of life, as well as future goals and meaningful life domains among 462 parents (89.6% females; $M=44$ yrs, $SD=6.26$) of children and adolescents (6-18 yrs) with low-mild to severe disabilities, attending 11 Italian rehabilitation centres. Quantitative measures included Resilience Scale for Adults (RSA), Caregiver Burden Inventor (CBI) and Adult Carers Quality of Life Questionnaire (AC-QoL). Four open-ended questions from the Eudaimonic and Hedonic Happiness Investigation (EHHI) provided information on caregivers' future goals and most meaningful life domains, together with the underlying motives. Although caring for children with disability was associated with high burden levels, participants globally reported good quality of life and high resilience as well. Family was largely predominant in the descriptions of meaningful life domains, future goals and underlying motives; specifically, caregivers mentioned the intrinsic value of having a family, their investment on family members' well-being, and the importance of reciprocity and solidarity within the family. Findings suggest that, beyond representing a burden, family caregiving can be a source of meaning and a core investment target, a relevant component of resilience and positive quality of life. Programs addressing caregiver needs should therefore complement burden mitigation interventions with strategies aimed at both strengthening caregivers' assets and supporting their long-term goals.

241. Individual Alpha Frequency as a Biomarker of Attentional Stability During the Vigilance Decrement: a Preliminary Study on Healthy Subject

Lidia Teresa Niglia¹, Massimo Bertoli¹, Pierpaolo Croce², Filippo Zappasodi², Giovanni Assenza³, Marcella Brunetti²

¹ Department of Neuroscience, Imaging and Clinical Sciences, G. d'Annunzio University of Chieti-Pescara, Chieti, Italy

² Institute for Advance Biomedical Technology (ITAB) and Department of Neurosciences, Imaging and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy

³ Unit of Neurology, Neurophysiology, Neurobiology, Department of Medicine, University Campus Bio-Medico of Rome, Rome, Italy

Poster · Attention, perception and consciousness

Sustained attention deteriorates systematically during prolonged tasks, transitioning through a vigilance decrement after 15–20 minutes detectable from an increased intra-individual response time (RT) variability rather than an overall slowing. This exploratory study examined whether resting-state Individual Alpha Frequency (IAF) - the dominant EEG alpha-band peak, proposed as a marker of visual

processing rate - predicts attentional stability within the vigilance decrement transition. After excluding five participants for data quality or ceiling-level performance, thirteen healthy young volunteers completed an asymmetric visual Go/No-Go task (~40 min, 5 blocks; 80% GO, 20% No-Go). High density 128 channels Resting-state EEG was recorded pre-task (eyes-closed); IAF was estimated via spectral peak (PAF) and centre-of-gravity (CoG) methods. The primary measure was the coefficient of variation of correct GO RTs (CV_RT), indexing intra-individual instability independently of mean speed. Results show that higher IAF values were associated with greater CV_RT in the attentional transition phase (Blocks 2–3, minutes 8–24; p CoG = .709, p = .007), without a corresponding effect on mean RT. No significant association emerged in the later phase (minutes 24–40). Speculatively, these patterns may reflect distinct individual modes of attentional regulation across task time, rather than differential performance quality per se. Higher-IAF individuals appear to show greater early instability before stabilizing, while lower-IAF individuals maintain a flatter profile throughout the task. Given the exploratory design and small sample ($N = 13$), findings are hypothesis-generating. Resting-state IAF emerges as a possible neurophysiological marker of individual attentional regulation during the critical transition phase of prolonged cognitive tasks.

O

242. The ontogeny of peripersonal space representation and body-centred prediction in human infancy.

Giulia Orioli¹

¹ Centre for Developmental Science, School of Psychology, University of Birmingham

Intervento in simposio · Action and movement

Peripersonal space is the space immediately surrounding the body, a predictive and multisensory-motor interface mediating every physical interaction between the body and the external world through the integration of tactile, visual and auditory stimulation occurring near the body. Despite the crucial role of peripersonal space, reflected by extensive research on its functions, plasticity, and neural underpinnings in adults, very little is known about the ontogeny of its representation in early postnatal life. This is particularly striking when considering that peripersonal space hosts newborns' earliest interactions with both their own body and the extrauterine environment, which hold a central role in shaping their learning and development. In this talk, I will present a set of studies in which we investigated how newborns and young infants perceive and represent the space immediately surrounding their body, and particularly how they perceive motion in depth and represent peripersonal space boundaries. I will also briefly touch upon differences in peripersonal space representation between neurotypical and autistic children. Finally, I will illustrate recent findings highlighting how infants' representation of motion in space in relation to their body can support early-developing body-centred predictive processing mechanisms. Overall, these findings suggest that, likely by virtue of prenatal accumulation of experience supported by the early availability of the tactile and auditory systems, humans seem to come to the world well equipped to perceive the multisensory space surrounding their body and to build predictive representations of events that may have tangible consequences for their body and self.

243. Sign-Tracking as a Transdiagnostic Endophenotype: Divergent Thalamic Circuits Linking Reward and Fear

Cristina Orsini¹, Valeria Tarmati¹, Andrea Sepe¹, Martino Schettino¹, Simona Cabib¹

¹ Sapienza Università di Roma, Dipartimento di Psicologia

Intervento in simposio · Emotions and motivation

Sign-tracking (ST) is a behavioral phenotype in which reward-predictive cues acquire excessive motivational salience. Although not pathological per se, ST is associated with impulsivity and increased vulnerability to substance use disorders. Preclinical evidence further indicates that ST-prone individuals display a progressive, cue-triggered amplification of fear responses (fear incubation), modeling key features of anxiety-related conditions, including post-traumatic stress disorder. These observations support ST as a potential transdiagnostic endophenotype linking maladaptive reward and fear processing. The paraventricular nucleus of the thalamus (PVT) is emerging as a critical hub coordinating motivational and emotional states and may act as a functional "switch" between reward- and fear-related circuits. Using C57BL/6J (C57) and DBA/2J (DBA) male inbred mice, we investigated whether similar behavioral phenotypes rely on distinct neural substrates. While both strains exhibit comparable levels of ST, underlying mechanisms diverge as serotonin modulation selectively alters ST in C57 mice, and distinct PVT subregions contribute to ST acquisition (posterior PVT in C57; anterior PVT in DBA). We further demonstrate that dopamine signaling within the nucleus accumbens differentially regulates ST expression across strains. Importantly, although both strains develop cue-induced fear incubation, this process depends on opposite PVT subregions (anterior in C57; posterior in DBA), revealing a striking dissociation from ST-related circuitry. These findings indicate that similar behavioral outcomes can arise from distinct circuit-level mechanisms, reflecting neurobiological heterogeneity. This has important translational implications, suggesting that individual variability in circuit engagement may underlie differential vulnerability to comorbid addiction and anxiety disorders, and highlighting the need for circuit-informed, personalized therapeutic approaches.

244. Spatial Representations and Motor Control: The Role of the Body as an Action Target

Renato Orti¹, Giovanni Formisano¹, Tina Iachini¹, Angela Bartolo², Gennaro Ruggiero¹, Francesco Ruotolo¹

¹ University of Campania "L. Vanvitelli", Department of Psychology

² University of Lille, SCALab - Sciences Cognitives et Sciences Affectives

Intervento in simposio · Action and movement

Interacting with objects requires representing their spatial location. Such representations typically rely on egocentric or allocentric reference frames: in the former, positions are coded relative to the body, in the latter they are defined based on the relationships among objects in the environment. In some circumstances, the body is not only the reference point of action but also its target (e.g., combing one's hair). How does this dual role of the body influence construction and maintenance of spatial representations of objects? To address this question, three studies were conducted to examine how direction of use (toward vs. away from the body) and grasp type (precision vs. power) interact with egocentric and allocentric spatial

representation processes. Participants performed a visuo-spatial memory task in which they memorized the positions of object pairs and evaluated their relative distance under different levels of complexity: immediate recall (Experiment 1) and delayed recall with or without interference (Experiments 2, 3). Results showed a selective impairment in egocentric judgments for objects requiring a precision grasp and used toward the body, suggesting increased integration demands during encoding. This effect was sensitive to interference from an inhibitory control task (Go/No-Go), whereas a general interference task (backward counting) produced non-selective effects, particularly on allocentric judgments. These findings are compatible with the hypothesis that egocentric representations do not simply encode object locations relative to the body, but may also include the body as a potential target of action. Generally, spatial representations appear to emerge as dynamic constructions shaped by action constraints.

P

245. rTMS modulates dysfunctional cognition in TRD: evidence from a longitudinal study

Lorenzo Pio Padula¹, Ilenia Rosa¹, Antonio D'Attilio¹, Alessia Santeusano¹, Serena Panichella¹, Luca Persico¹, Domenico Voso¹, Mauro Pettorosso¹, Giovanni Martinotti¹

¹ Department of Neurosciences, Imaging and Clinical Sciences, Università degli Studi G. d'Annunzio, Chieti, Italy

Poster · Health, sport and wellbeing

Rumination and hopelessness represent core component of dysfunctional cognition in depression and are related to poorer treatment outcomes. While repetitive transcranial magnetic stimulation (rTMS) is an established intervention for depression, its effects on these cognitive domains are not fully understood. This study examined whether rTMS modulates rumination and hopelessness, and whether these changes relate to clinical response. Fifty patients with treatment-resistant depression (TRD) received an FDA approved rTMS protocol over the left dlPFC. Clinical and cognitive measures (MADRS, RRS, BHS) were collected at baseline (T0), one week (T1), and one month (T2). Repeated measures ANOVAs tested time effects and interactions with clinical response at T1 and T2. Correlations between changes in depressive and cognitive measures were also computed. Significant reductions over time were found for all measures (all $p < .05$). Rumination showed a significant time $\times$ responder interaction at T1 ($p = .005$), with greater improvement in responders respect to non-responders. Reductions in depressive symptoms were associated with reductions in rumination at T1 ($r = 0.337$, $p = .017$). Higher baseline rumination was significantly related with less clinical improvement both at T1 ($r = -0.387$, $p = .005$) and T2 ($r = -0.284$, $p = .046$). Changes in rumination and hopelessness were significantly correlated at both T1 ($r = 0.475$, $p < .001$) and T2 ($r = 0.434$, $p = .002$). These results show that rTMS modulates dysfunctional cognitive processes (i.e., rumination and hopelessness) in a coordinate manner, and these changes were associated with early clinical improvement. Findings support the view that rTMS promotes integrated affective and cognitive improvements, offering new perspectives for personalized treatment strategies.

246. Cooperation only works in the spotlight: evidence from a public health resource dilemma

Fabio Paglieri¹, Marco Marini¹, Sebastiano Munini², Alessandro Sapienza¹, Anna Gerna², Rino Falcone¹

¹ Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie della Cognizione (ISTC-CNR)

² Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie della Cognizione (ISTC-CNR) & Sapienza Università di Roma, Dipartimento di Psicologia

Mini-talk · Social cognition

Introduction This study examined cooperative decision-making in a public goods dilemma for health-related collective investments. Two key variables were manipulated: group level of cooperation (within subjects) and amount of information available on individual contribution (Transparent vs. Opaque, between subjects). **Methods** The study employed a mixed within-between interactions design. Participants ($N = 187$) completed repeated allocation task, having to manage a limited budget while deciding how much to invest in a shared resource pool: after each turn, a feedback was provided, either detailing individual investment and payoff of each group member (Transparent), or showing only the total group investment, without information on individual contributions (Opaque). Level of cooperation was manipulated within subjects across two independent rounds. **Results** We found significant interaction between Feedback Condition and Cooperation Level ($p < .001$): in the Transparent condition, the association between Cooperation Level and Investment was significantly positive ($p < .001$), whereas in the Opaque condition the same relationship was negative but not significant ($p = .317$). This suggests that higher cooperation promoted investment when feedback was transparent, whereas, in the absence of individual-level feedback, this effect disappeared. **Conclusion** Findings show that interacting with prosocial partners increases cooperation only when individual contributions are made visible. It remains unclear whether this depends on one's own contribution been visible to others (peer-pressure hypothesis), the ability to learn from others (social imitation hypothesis), or both. A follow-up study is being conducted, to discriminate between these interpretations.

247. Prior expectations bias confidence judgments through parietal alpha-band modulation

Anna Pasini¹, Luca Tarasi², Domenico Romanazzi², Margherita Covelli², Vincenzo Romei²

¹ University of Bologna, Department of Philosophy

² University of Bologna, Department of Psychology

Mini-talk · Attention, perception and consciousness

Within Signal Detection Theory, confidence judgments about decision accuracy can be decomposed into two components: metacognitive sensitivity and metacognitive bias. While prior expectations are known to bias perceptual choices, their influence on these metacognitive dimensions, as well as the underlying neural mechanisms, remains poorly understood. Here, in a TMS-EEG experiment, we identify parietal alpha modulation as an oscillatory mechanism linking prior expectations to selective shifts in metacognitive bias. Specifically, participants performed a visual detection task in which a probabilistic cue induced expectations about target presence, before and after right-parietal continuous Theta-Burst Stimulation, while electroencephalographic activity was recorded. Our findings reveal that probabilistic cues induce a congruence-dependent metacognitive bias: participants report higher confidence when their perceptual decision aligns with the

cue, and lower confidence when it does not. Notably, this cue-induced effect occurs without changes in metacognitive sensitivity, suggesting that prior expectations bias the threshold for reporting confidence rather than the ability to discriminate between correct and incorrect choices. Critically, electroencephalography shows that pre-stimulus alpha amplitude plays a crucial role in this process. In particular, the cue-induced right-parietal alpha modulation predicts interindividual differences in the magnitude of metacognitive bias: greater alpha modulation is associated with a stronger bias induced by prior information. Crucially, right-parietal inhibition disrupts cue-induced alpha modulation relative to sham stimulation. This oscillatory change, in turn, drives a selective reduction in metacognitive bias, while metacognitive sensitivity remains stable. Together, these findings demonstrate that parietal alpha modulation causally and selectively shapes metacognitive bias, revealing an oscillatory mechanism underlying predictive metacognition.

248. Third-party punishment in Autism: an EEG hyperscanning study during an empathic interaction

Andrea Passeri¹, Elisabetta Ferrari¹, Maristella Scorza¹, Sandro Rubichi¹, Cristina Iani², Virginia Giuberti³, Jlenia Toppi⁴, Laura Astolfi⁴, Angela Ciaramidaro¹

¹ Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia

² Department of Surgery, Medicine, Dentistry and Morphological Sciences with Interest in Transplant, Oncology and Regenerative Medicine, University of Modena and Reggio Emilia

³ Autism Center, Child and Adolescent Mental Health Service, Department of Mental Health and Pathological Addiction, Azienda USL-IRCCS of Reggio Emilia

⁴ Department of Computer, Control, and Management Engineering "Antonio Ruberti", Sapienza University of Rome

Poster · Social cognition

Affective empathy is the ability to share others' emotions by observing their affective state, reflecting a similar emotional response in the observer. Individuals with autism spectrum disorder (ASD) often show difficulties in social interaction. However, whether affective empathy is impaired in autism remains debated. This study uses a monetary game (third-party punishment, TPP) and simultaneous EEG recordings to investigate shared emotional processing and the neural synchronization during prosocial behavior in ASD, adopting a multiple-brain approach focusing on neural connectivity and activation. Participants were divided into two groups: an experimental group with 13 dyads (each including one ASD and one neurotypical participant) and a control group with 17 neurotypical dyads. Brain activity was recorded simultaneously using dual-EEG (64 channels per subject) while participants engaged in the TPP. The task included three levels of fairness and two types of dictators (human or computer). Intra- and inter-subject connectivity networks were analyzed in theta and alpha frequency bands using graph theory metrics. Behaviorally, observers in both groups punished unfair offers from human agents (punishment severity increased with unfairness) but not those from the computer agent, with no significant differences between groups. However, neural data showed reduced inter-brain connectivity in social brain regions in dyads including an ASD participant compared to neurotypical dyads. These findings identify neural mechanisms underlying prosocial behavior and show that inter-brain connectivity during empathic interaction is modulated differently in autism.

249. Metacognition for Listening in Noise Across the Lifespan: Effects of Age and Mild Hearing Loss

Francesco Pavani¹, Elena Giovanelli², Chiara Valzolgher², Elena Gessa², Tommaso Rosi³, Chiara Visentin⁴, Nicola Prodi⁴, Domenico Spinella⁵, Giuseppe Frau⁶

¹ Università di Trento, Center for Mind/Brain Sciences (CIMEC)

² University of Trento, Center for Mind/Brain Sciences (CIMEC)

³ LevelUp

⁴ University of Ferrara

⁵ Studio UdiVer

⁶ Ospedale di Rovereto, ORL

Poster · Aging & Life-span

Listening in noise requires not only sensory and cognitive processing but also metacognition—the ability to monitor performance and evaluate confidence. Across two studies involving 139 participants, we examined how healthy aging and mild hearing loss (HL) affect metacognitive monitoring, beliefs (self-efficacy and locus of control), and the use of compensatory strategies. Results indicated that healthy aging does not impair metacognitive monitoring; older adults with normal hearing performed comparably to younger adults in tracking their listening accuracy. However, the presence of mild HL in older adults significantly altered metacognitive beliefs. While their monitoring accuracy remained intact, older adults with HL reported lower self-efficacy and less frequent use of certain behavioral strategies. Furthermore, an internal locus of control and lower self-efficacy were associated with increased use of non-verbal strategies, suggesting that beliefs directly shape coping behaviors. These findings highlight a notable dissociation: while the ability to monitor listening performance can remain stable across the lifespan, sensory decline shifts beliefs about personal competence. This suggests that age-related communication challenges are not solely due to monitoring failures but are influenced by how individuals perceive their own control and efficacy. Consequently, interventions for older adults should address metacognitive beliefs alongside auditory rehabilitation. Strengthening self-efficacy and perceived control may be essential to promoting adaptive strategy use and improving social participation in noisy environments.

250. Multimodal communication in action: hand gestures as socio-affective scaffolds in Infant Daycare Settings

Francesco Pavani¹, Matilde Barucci¹

¹ University of Trento, Center for Mind/Brain Sciences (CIMEC)

Intervento in simposio · Language, reading and music

Hand gestures are an integral part of multimodal communication behaviour. They are recognized as fundamental precursors to language, and key communication tools in adult-infant interactions. In this talk, we will present an example of application of multimodal communication in infant daycare settings which reveals that early gesture-based training toward educators can enrich the communicative environment in infant daycare settings. Moreover, we show that gestures can act as socio-affective scaffolds. Specifically, we will present a 2-years research program involving eight daycare centers randomly assigned to 3 training conditions: Baby Signs hand-gesture use (BS), Communication and Interaction with no reference to gestures (CI), and No Training (NT). The study included a total of 180 infants (mean age 21±6 months). A video corpus of infant-educator interactions was collected, and socio-affective development was assessed using the Preschool Socio-Affective Profile, at three time-points from the beginning

of training (T1, T2 and T3, at 10, 14 and 18 months, respectively). Video analyses showed that BS hand-gestures are rapidly integrated into infants' communicative repertoires already at T1. Notably, while the educator training in Baby Signs boosted infants' gesture use overall, the communication training without BS hand-gestures also boosted representational gestures specifically. We also found evidence that integrating BS hand-gestures into everyday infant daycare centers routines can support socio-affective development, particularly by facilitating an earlier regulation of internalizing and externalizing problems in more vulnerable infants. BS use can thus accelerate the consolidation of adaptive regulatory skills, as infants progress through this sensitive developmental window.

251. Environments and Well-being: Advancing Theory, Methods, and Applications in Environmental Psychology

Francesca Pazzaglia¹, Alessandro Angrilli², Marino Bonaiuto³, Sjoerd Ebisch⁴, Tina Iachini⁵, Angelica Moè⁶, Margherita Pasini⁷

¹ Università di Padova

² Università di Padova, Dipartimento Psicologia Generale

³ Sapienza Università di Roma, Dipartimento di Psicologia dei Processi di Sviluppo e Socializzazione

⁴ Università di Chieti-Pescara, Department of Neuroscience, Imaging and Clinical Sciences

⁵ Università della Campania, Dipartimento di Psicologia

⁶ Università di Padova, Dipartimento di Psicologia Generale

⁷ Università di Verona, Dipartimento di Scienze Umane

Panel · PANEL (no track)

Environmental psychology has increasingly highlighted the complex and dynamic relationship between environments and human well-being. In the current societal and scientific context—marked by climate change, rapid urbanization, evolving work settings, and emerging frontiers such as space exploration—understanding how different environments shape psychological processes and health outcomes is more crucial than ever. Addressing these challenges requires not only theoretical advancement, but also methodological innovation and strong translational efforts. This panel aims to foster an interdisciplinary discussion on the role of environmental psychology in advancing theoretical frameworks, methodological approaches, and practical applications across diverse contexts, including natural environments, urban settings, workplaces, healthcare environments, and extraterrestrial habitats. Particular attention will be devoted to consolidating and extending key constructs such as environmental restorativeness, biophilic design, and place attachment, alongside emerging methodological challenges, including the integration of experimental, field-based, and interdisciplinary approaches. At the same time, the panel will explore the translational potential of environmental psychology, focusing on its implications for public policy, healthcare systems, and professional practices. Panelists will discuss opportunities and challenges in bridging scientific evidence with real-world applications. The panel brings together scholars with complementary expertise who have been actively involved in national and international research projects (e.g., Horizon Europe, PRIN, PNRR) addressing environment–health relationships, contributing to both theoretical advancements and applied impact. Many of them are also affiliated with the Inter-University Research Centre in Environmental Psychology (CIRPA), a key reference point for research in this field. Their diverse perspectives will foster a rich and interactive discussion.

252. Dissociable effects of stress and endocannabinoid signaling in contextual fear extinction: Evidence from fMRI

Tiziana Pedale¹, Fabrizio Parente², Patrizia Campolongo², Maria Morena², Valerio Santangelo¹

¹ Dept. of Philosophy, Social Sciences & Education, University of Perugia, Italy

² Dept. of Physiology and Pharmacology, Sapienza University of Rome, Rome, Italy

Mini-talk · Emotions and motivation

Exposure to contexts previously associated with threat elicits enhanced fear responses, even in the absence of the associated noxious stimuli. Moreover, such responses appear to generalize to similar contexts. While it is known that stress can enhance fear responses and that the endocannabinoid system can promote fear extinction, it remains poorly understood how these factors interact, as well their neural correlates during contextual fear extinction. Here, we conducted an fMRI study aiming to investigate fear extinction and generalization under stress and in the presence of palmitoylethanolamide (PEA), an endogenous lipid mediator that enhances endocannabinoid signaling by increasing anandamide availability via “entourage effects”. Forty-nine participants completed a two-day experiment. On day one (acquisition), mildly painful electric shocks were unpredictably delivered during passive exploration of a virtual room (anxiety context, CTX+), but never in a second room (safety context, CTX–). On day two (extinction), participants underwent fMRI while viewing the same environments, plus a third similar environment (generalization context, CTX–G). Prior to re-exposure, they received either a stress manipulation (cold water pressor test) or a control condition (warm water) and were administered PEA or placebo. Stressed participants showed increased bilateral amygdala and hippocampal activation during initial processing of the CTX+. In contrast, PEA administration was associated with sustained reduced ventromedial prefrontal cortex activation, particularly while viewing CTX–G, possibly reflecting reduced regulatory demands during extinction. Overall, these findings identify a neural signature of stress-enhanced fear responses and suggest that PEA may facilitate extinction of maladaptive fear, supporting its potential role in PTSD treatment.

253. Awe and Psychological Depth: Evidence From Field and VR Experiments

Matteo Perini¹, Johan Karremans¹, Hein van Schie¹, Jasper de Groot¹

¹ Department of Social and Cultural Psychology, Behavioural Science Institute, Radboud University

Mini-talk · Emotions and motivation

Awe has been linked to diverse outcomes, including prosociality, curiosity, authenticity, and meaning. We propose psychological depth as a common denominator across these outcomes. We tested whether awe increases the psychological depth of reflections, defined as engagement with fundamental ideas and principles and enhanced integrative complexity (i.e., differentiation and integration of ideas). In a within-subject field experiment (N=74), participants reflected on two self-selected topics, once on the top floor of an 88-m building with a panoramic view and once on the ground floor, with randomized order and topic assignment. In a within-subject VR experiment (N=79), participants reflected while exposed to four immersive stimuli: awe-space, awe-nature, amusement, and neutral. After

each reflection, participants rated awe, reflective depth, and related experiences; the field study also measured state authenticity. The 14-item Reflective Depth Scale showed high internal consistency ($\omega=.93$), acceptable one-factor CFA fit, metric/scalar invariance, and convergent/concurrent validity. Manipulation checks confirmed awe induction in both studies. In the field study, the panoramic-view condition increased reflective depth ($M_{\text{top}}=4.64$ vs. $M_{\text{ground}}=4.35$, $d=0.33$, $p=.003$). In VR, awe stimuli increased reflective depth relative to controls ($M_{\text{awe}}=4.77$ vs. $M_{\text{control}}=4.11$, $d=0.64$, $p<.001$). Additional outcomes followed the same pattern: reflections in the awe condition showed higher state authenticity, emotional engagement, insightfulness, and meaning. Across two studies, awe increased depth in reflection. This paradigm offers a new way to study awe while generating analyzable qualitative reflection data. Theoretically, it supports psychological depth as a candidate unifying construct; practically, it enables tests of awe-facilitated reflection interventions for psychological well-being and important decisions.

254. The Role of Expertise in Action Anticipation: An Ecological Virtual Reality Study in Tennis

Simona Perrone¹, Daniele Romano¹, Luisa Girelli¹

¹ Università Milano-Bicocca, Dipartimento di Psicologia

Poster · Action and movement

The ability to anticipate upcoming events is a fundamental cognitive process for effective environmental interaction, relying on the coupling between perception and action. This mechanism enables the rapid integration of sensory inputs into motor responses under high time pressure. This is particularly crucial in sports, where athletes extract relevant information (e.g., kinematic and auditory cues) to anticipate the opponent's actions. However, research has mainly employed computer-based occlusion paradigms, which decouple perception from realistic movement. In this context, virtual reality (VR) offers a high-fidelity environment for investigating anticipation within an ecological setting that preserves a realistic motor response. The present study aimed to assess the use of VR technology to investigate the expertise advantage in anticipation within an immersive environment. Forty tennis players (20 experts, 20 amateurs) were assessed using a VR platform. The study employed sport-specific drills measuring accuracy, reaction time, and motor responses to an opponent's serve, alongside general visuomotor drills. Results indicated a selective advantage for expert players in domain-specific tasks. Experts exhibited higher accuracy, faster reaction times and, more efficient motor responses during service returns, consistent with performance expectations in real-game contexts. Additionally, experts adapted more rapidly to the virtual environment, showing a significantly steeper increase in motor accuracy compared to amateurs. In contrast, no differences emerged in general visuomotor drills between groups for both reaction time and visuomotor ability. These results suggest that the perception-action advantage of experts is domain-specific, highlighting the potential role of VR to advance research on action anticipation within ecological environments.

255. Mappatura delle dinamiche di comprensione morfosintattica: evidenze da dati di mouse tracking

Valentina Persici¹, Paola Angelelli², Chiara Valeria Marinelli³, Mirta Vernice⁴

¹ Dipartimento di Studi Umanistici, Università di Urbino Carlo Bo

² Dipartimento di Scienze Umane e Sociali, Università del Salento

³ Dipartimento di Studi Umanistici, Lettere, Beni Culturali, Scienze della Formazione, Università di Foggia

⁴ Dipartimento di Studi Umanistici, Università degli Studi di Urbino Carlo Bo

Mini-talk · Language, reading and music

Studi recenti hanno evidenziato la natura incrementale della comprensione linguistica, mostrando come l'elaborazione delle frasi implichi un'attivazione progressiva e una competizione tra interpretazioni nel tempo (Kukona, 2023). Misure comportamentali continue, come il tracciamento del mouse, permettono di cogliere le dinamiche decisionali durante la risposta (Wulff et al., 2025). Il presente studio adotta un approccio dinamico allo studio dell'elaborazione di strutture sintatticamente complesse, utilizzando il mouse tracking per mappare l'evoluzione del processo decisionale. A 61 giovani adulti (età media = 17,13; DS = 0,39) è stato somministrato SynTrack, un compito computerizzato di comprensione morfosintattica. I partecipanti leggevano frasi complesse (passive, relative sul soggetto e sull'oggetto, frasi con clitici e relative oblique) in modalità self-paced. Dopo una domanda di comprensione, selezionavano l'immagine corretta tra quattro alternative, mentre venivano registrati i movimenti del mouse. Le misure di curvatura (es. area sotto la curva, AUC) sono state utilizzate come indici del grado di competizione tra alternative, mentre le misure di complessità (es. sample entropy) come indicatori di instabilità ed esitazione nel processo decisionale. I risultati mostrano differenze tra strutture sintattiche in termini di accuratezza, velocità e dinamica della competizione. Inoltre, analisi di clustering hanno evidenziato profili di elaborazione individuali distinti: a parità di accuratezza, i partecipanti differiscono nel modo in cui gestiscono e risolvono la competizione nel tempo. Il mouse tracking si conferma uno strumento sensibile per analizzare tali dinamiche, con potenziali applicazioni cliniche ed educative, ad esempio per l'identificazione precoce di profili atipici e il monitoraggio degli interventi.

256. Being FAIR: Advancing Scientific Practice in Experimental Psychology

Ambra Perugini¹, Massimiliano Pastore²

¹ Università di Padova, DPSS

² Università di Padova, DPSS

Mini-talk · Methodology

FAIR (Findable, Accessible, Interoperable, Reusable), is not only a nice word, but a set of principles guiding researchers and technicians in managing and sharing data, alongside the emerging role of data stewards. Findable refers to making data and metadata identifiable through persistent identifiers and rich descriptions. Accessible means that data can be retrieved through standardised protocols, typically via trusted repositories, even when access is restricted. Interoperable requires the use of shared formats, vocabularies, and machine-readable standards to enable integration across systems. Reusable ensures that data are well-documented, accompanied by clear usage licenses, and described with sufficient detail to support future use. These principles extend beyond academia and are increasingly relevant across multiple domains. Researchers' responsibilities go beyond ensuring

transparency and methodological rigor: they must also promote accessibility and reusability to maximise the impact and value of their work. FAIR principles apply not only to datasets but also to software, making them central to Open Science practices. In this contribution, I will introduce the four FAIR principles and discuss their relevance for experimental psychology, followed by a brief overview of practical tools supporting their implementation in everyday research workflows.

257. An EEG and computational investigation of visual working memory: Bridging the gap between Marr's levels of analysis

Alberto Petrin¹, Ronald Van den Berg², Mikael Lundqvist³, Francesco Resta⁴, Roberto Dell'Acqua⁵

¹ Dipartimento della Psicologia dello Sviluppo e della Socializzazione (DPSS) dell'Università degli Studi di Padova

² Department of Psychology of the University of Stockholm

³ Department of Clinical Neuroscience of the Karolinska Institutet

⁴ Department of Education and Psychology of Freie Universität

⁵ Dipartimento di Psicologia dello Sviluppo e della Socializzazione (DPSS) dell'Università di Padova

Mini-talk · Memory

Visual working memory (VWM) is a core component of human cognition, yet the nature of its limited capacity remains unresolved. Behavioral model-fitting studies typically characterize VWM capacity limits as arising from continuous resource constraints, whereas neuroimaging evidence has been interpreted as supporting fixed-slot architectures. This inconsistency may stem from the fact that computational studies overlook processes specific to sequential presentation and single-item resource allocation, which may yield a different picture of capacity limitations. On the other hand, neural indices of VWM may reflect confounding cognitive processes or may have been misinterpreted in terms of the indexed mechanisms. To address this issue, we fitted a set of computational models to data from 28 healthy young adults who performed a sequential continuous-report VWM task while EEG was recorded. Using a factorial model design, we tested combinations of candidate mechanisms — including continuous resources, fixed slots, temporal decay, redistribution cost, swap errors, and attentional focus — to identify the combination that best explained behavior. Furthermore, we evaluated neural indices of resource allocation, such as the aperiodic component, oscillatory power, and ERP amplitudes, to relate these measures to model parameters and to test whether including neural predictors altered the initial conclusions. Behavior was best explained by a model combining continuous resources, redistribution cost, swap errors, and attentional focus. This pattern was partially supported when neural measures were included. Among these, the aperiodic component showed the strongest association with differences in encoding-related brain states across stimuli, suggesting that it may index excitation–inhibition balance during VWM encoding.

258. Speech Production–Perception Link: Individual Differences in Acoustic Adaptation and Neural Speech Tracking

Giorgio Piazza¹, Giovanni Di Liberto¹

¹ Trinity College Dublin

Poster · Language, reading and music

Human communication relies on the interplay between speech production and perception, including the ability to adapt speech to noisy environments and maintain successful communication.

An example is the Lombard effect, where speakers modify acoustic features to enhance intelligibility. Similarly, the listener's brain can selectively process target speech against competing background noise. However, individuals vary in these abilities, and reduced adaptation can compromise communication. It remains unknown whether one's own speech adaptation relates to their perceptual skills. We hypothesize that individuals who adapt their speech more proficiently also perceive others' speech better, reflecting a tight production–perception link. To test this, pilot participants (N = 5) completed a naturalistic speaking task with a confederate in quiet and babble noise. Speech production adaptation was quantified across three acoustic dimensions: vowel space area (spectral), speech rate (temporal), and word-onset acoustic energy (acoustic envelope amplitude). These measures represent how distinctly participants pronounced vowels, how fast they spoke, and how sharply they marked word beginnings. In a separate OPM MEG session, the same participants listened to 30 minutes of pre-recorded speech in quiet and babble noise (1 dB SNR). Neural tracking of the speech envelope was assessed using backward Temporal Response Function modelling. Preliminary results show individual variability in all three production measures, with promising differentiation between stronger and weaker adapters. Analyses linking acoustic adaptation profiles to neural tracking accuracy are ongoing. This work will pioneer an integrated behavioural–neurophysiological approach to studying individual differences in real world communication.

259. The brain predicts visual speech units during naturalistic audiovisual speech listening

Giorgio Piazza¹, Francesco Vespignani², Simone Gastaldon³, Francesca Peressott²

¹ Trinity College Dublin

² DPSS, University of Padova

³ Basque Center on Cognition, Brain, and Language (BCBL)

Intervento in simposio · Language, reading and music

Humans excel at understanding spoken language during face-to-face interactions by leveraging linguistic and extra-linguistic cues to predict incoming information. Predictive processing is fundamental to language comprehension, yet research has primarily focused on auditory mechanisms, emphasizing how listeners anticipate upcoming phonemes and words based on the acoustic and linguistic structure of speech. However, speech is inherently multimodal and here we show that language prediction is likewise inherently multimodal. We examined the role of mouth cues in shaping language predictions during speech comprehension. Thirty Italian participants watched videos of an actor narrating two stories in Italian, with the mouth either visible or covered (~45 minutes), while EEG data were recorded. Using Temporal Response Function analysis, we mapped stimulus features to neural responses under natural listening conditions, enabling the simultaneous examination of multiple input features. Our analysis focused on the encoding of mouth movements, visemic surprisal (the unpredictability of visual phonemes), and semantic surprisal (the unpredictability of lexical elements) over time. Our results reveal that visemes are actively predicted beyond low-level mouth movements, with neural signatures emerging before visual articulation (~200 ms). Additionally, access to visual speech enhances semantic prediction, as reflected in stronger N400 responses in the visible mouth compared to the covered mouth condition. These findings demonstrate that speech comprehension relies on a

hierarchical multimodal predictive architecture, integrating visual and auditory linguistic information. This framework advances understanding of how the brain efficiently processes natural communication by dynamically incorporating visual cues to optimize linguistic expectations.

260. Dysfunctional food-related inhibitory hyper-control in anorexia nervosa is modulated by cerebellar activity

Silvia Picazio¹

¹ Guglielmo Marconi University /Department of Human Sciences

Mini-talk · Reasoning and abstract cognition

Anorexia nervosa (AN) represents a multifaceted disorder with a profound impact on Western society. Beyond some report of executive function impairments, patients with AN exhibit consistently diminished cerebellar activation in response to food-related stimuli. Given the cerebellum's critical role in appetite regulation, body representation, and, as recently demonstrated, inhibitory control, this study aimed to investigate the cerebellar mediation of food-related inhibition in AN. To this end, 24 patients with AN and 46 matched healthy controls (HC) performed a food-related Go/NoGo task following transcranial direct current stimulation (tDCS) applied over the left cerebellar hemisphere. In a between-subjects design, subgroups (AN=12; HC=23) were assigned to either active anodal tDCS or sham stimulation. The results indicated that the AN sham group exhibited significantly higher task accuracy compared to the HC sham group, suggesting a baseline inhibitory hyper-control. Notably, active anodal tDCS reduced accuracy in AN patients to levels comparable with HC participants, effectively modulating their performance. Furthermore, AN patients displayed lower scores on Raven's Progressive Matrices and rated high-calorie food images as significantly less palatable than HCs. These findings suggest that the inhibitory hyper-control characteristic of AN is particularly pronounced in food-related contexts and can be successfully re-modulated via non-invasive cerebellar stimulation. Such results offer promising translational perspectives for the development of novel therapeutic interventions in Anorexia Nervosa.

261. SNAs in ocular drift: does number magnitude influence involuntary oculomotor behavior?

Stefano Pileggi¹, Alberto Mariconda¹, Federico D'Atri¹, Valter Prpic², Carlo Fantoni¹, Mauro Murgia¹

¹ Università degli Studi di Trieste, Dipartimento di Scienze della Vita

² Università eCampus, Dipartimento di Scienze Teoriche e Applicate

Poster · Space, time and number

In a seminal study on the automaticity of Spatial-Numerical Associations (Myachykov et al., 2016), during the passive exposure to auditory odd numbers and while fixating a central circle, the average horizontal gaze position of participants shifted to the left in trials with small numbers, and to the right with large numbers. However, these findings are put into question, given the scarce number of observations and recent evidence suggesting the need to activate both the spatial and the magnitude codes to elicit SNAs (Pinto et al., 2019). In Experiment 1, the very same task of the original study was employed (150 trials X 55 subjects). In Experiment 2, another sample of participants were required to press the central button to numbers smaller/larger than 5 (150 trials X 52 subjects). In Experiment 1, a magnitude effect emerged only in the first block of trials (32 trials, the same number of trials of the original study): gaze position was more leftward for small compared to

large numbers. In Experiment 2, a magnitude effect consistent across blocks emerged. These results suggests that the original effect can be nullified by practice when magnitude is implicitly processed, while the effect is more stable when numerical codes are actively engaged (Exp. 2) even in absence of explicit spatial. Overall, these findings can be positioned between recent evidence emphasizing that SNAs require the concurrent activation of both the spatial and the numerical code (Pinto et al., 2019) and evidence supporting fully automatic SNAs (Myachykov et al., 2016).

262. Deontological and Altruistic Guilt Differentially Modulate Moral Decision-Making in Antisocial Personality Disorder

Giulio Piperno¹, Ida Gualtieri², Alessandra Mancini³, Irene Parisi², Francesco Mancini³, Salvatore Maria Aglioti², Maria Serena Panasiti²

¹ Sapienza Università di Roma, Dipartimento di Psicologia

² Sapienza Università di Roma

³ School of Cognitive Psychotherapy (APC-SPC), Rome, Italy

Intervento in simposio · Emotions and motivation

Guilt is closely tied to moral behaviour, functioning as a central mechanism through which individuals evaluate and regulate their actions in social contexts. Due to their lack of empathy, individuals with antisocial personality disorder (ASPD) are typically described as relatively insensitive to guilt, a feature often invoked to explain impairments in moral conduct. However, guilt is not a unitary construct: altruistic guilt (AG)-strongly linked to empathy- refers to distress arising from having harmed others or failed to help them, whereas deontological guilt (DG) stems from the violation of internalized moral rules and principles, regardless of direct harm. Despite this distinction, no study has systematically examined how these different forms of guilt may differentially influence moral behaviour in ASPD, leaving an important gap in understanding moral functioning in this population. To this aim, the present study investigates how AG and DG influence moral behaviour in individuals with ASPD compared to control participants without ASPD. Participants (N = 40; 20 ASPD, 20 controls) completed a moral decision-making task (Temptation to Lie Card Game), in which they could deceive another player for monetary gain. During the game, the emotional states were experimentally induced across three conditions: neutral, altruistic guilt, and deontological guilt. Results revealed a differential effect of guilt on behaviour. In controls, both forms of guilt significantly reduced deceptive choices across conditions. In individuals with ASPD, only deontological guilt reduced the tendency to deceive, whereas altruistic guilt showed no significant effect. These findings suggest that, despite impairments in empathic processing, individuals with ASPD may still respond to norm-based emotional signals. From a theoretical perspective, the study highlights the importance of distinguishing between types of guilt in understanding antisocial behaviour. From an applied perspective, the results suggest that interventions targeting rule-based moral processing may be more effective than those relying solely on empathy enhancement.

263. Memories shape who we are: physiological responses to true and fabricated negative autobiographical events

Alessandro Piro¹, Ivan Mangiulli², Federico Puleo², Daniela Grassi³, Nicole Novielli³, Filippo Lanubile³, Antonietta Curci²

¹ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

² Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

³ Università degli Studi di Bari Aldo Moro, Dipartimento di Informatica

Mini-talk · Memory

Sebbene la letteratura converga nel ritenere che il recupero di ricordi autentici susciti risposte fisiologiche peculiari, evidenze recenti suggeriscono che anche la rievocazione di ricordi fabbricati possa stimolare un'analoga attivazione delle componenti emotive e autonome (Faulkner & Leaver, 2016). Tuttavia, se negli studi sulla memoria i falsi ricordi spesso vengono prodotti inconsapevolmente, la generazione intenzionale di eventi fittizi (menzogna) dà luogo a processi cognitivi che possono modulare diversamente l'attivazione fisiologica. Sul solco di questa discrepanza si inserisce il dibattito sul ruolo della fantasia, ipotizzando che individui con un'elevata attività immaginativa possano manifestare deficit nel monitoraggio della realtà (reality monitoring), incontrando difficoltà nel distinguere tra eventi reali e immaginati. Dunque, il presente studio si propone di confrontare i pattern di attivazione fisiologica associati al recupero di ricordi autobiografici autentici e immaginati, esplorando le potenziali interazioni con la propensione alla fantasia e i tratti dissociativi. I partecipanti sono stati assegnati casualmente a due condizioni: a) solo pensiero (thinking) e b) pensiero e rievocazione verbale (thinking and retrieve) di eventi a valenza negativa, autentici o immaginati. Il battito cardiaco (HR) e la conduttanza cutanea (EDA) sono stati monitorati mediante l'utilizzo di dispositivi indossabili (Empatica Embrace Plus, www.empatica.com/embraceplus/); contestualmente, è stata somministrata una batteria di test per valutare propensione alla fantasia (CEQ), dissociazione (DES-II), affettività (PANAS) e qualità del dialogo interiore (VISQ). I risultati evidenziano che il recupero di ricordi autentici incrementa significativamente la frequenza cardiaca rispetto alla rievocazione di eventi fabbricati, confermando l'impatto dell'autenticità della memoria sull'attivazione fisiologica.

264. Ossitocina e vulnerabilità alla depressione dopo esperienze avverse precoci: evidenze da uno studio traslazionale uomo-topo

Silvia Pizzetti¹, Alice Corinti Passeri¹, Camilla Mancini², Lucy Babicola³, Matteo Di Segni⁴, Giorgio Di Lorenzo⁵, Rodolfo Rossi⁵, Carlo Cifani², Rossella Ventura⁶, Marica Denitti¹

¹ Università di Roma La Sapienza, Dipartimento di Psicologia

² Università di Camerino, Scuola di Scienze del Farmaco e dei Prodotti della Salute

³ IRCCS Fondazione Santa Lucia, Roma

⁴ IRCCS E. Medea dell'Associazione "La Nostra Famiglia"

⁵ Università di Roma Tor Vergata, Dipartimento di Medicina

⁶ IRCCS San Raffaele, Roma

Intervento in simposio · Emotions and motivation

Le esperienze avverse precoci (Early-Life Adversities, ELA) sono un importante fattore di rischio per lo sviluppo di depressione in età adulta. Tuttavia, gli esiti sintomatologici presentano un'elevata eterogeneità e i meccanismi neurobiologici sottostanti risultano ancora poco definiti. In questo contesto, è cruciale lo studio delle traiettorie di sviluppo

associate a diverse forme di ELA e l'ossitocina, in virtù del suo coinvolgimento nella regolazione dello stress, è un target ideale per comprendere il legame tra avversità precoce a vulnerabilità depressiva. Il presente studio adotta un approccio traslazionale per indagare come due forme di ELA, alterazione della relazione di attaccamento e neglect/trauma, influenzino lo sviluppo di fenotipi di tipo depressivo e il ruolo dell'ossitocina, con particolare attenzione alle differenze legate al sesso. Nel modello murino (topi C57BL/6J) le due condizioni sono state modulate rispettivamente tramite i paradigmi Repeated Cross-Fostering e Scarcity e sono stati valutati comportamenti simil-depressivi e livelli di ossitocina plasmatica in età adulta. In un campione umano non clinico, è stata valutata l'associazione tra ELA, sintomatologia depressiva (tramite questionari) e livelli ossitocinergici plasmatici. Nel topo, entrambe le ELA hanno indotto fenotipi simil-depressivi (diversi per tipo di esperienza) e un aumento di ossitocina nei maschi. Nelle femmine si osserva un incremento ossitocinergico senza comportamenti simil-depressivi. Nell'uomo, le ELA risultano associate a sintomi depressivi e all'aumento di ossitocina negli uomini, mentre nelle donne con sintomi depressivi correlati a ELA i livelli risultano ridotti. Questi dati suggeriscono un pattern sesso-specifico di disregolazione ossitocinergica indotta da esposizione ad esperienze precoci avverse.

265. Disregolazione circadiana e funzionamento psicosociale nel Disturbo Depressivo Maggiore: uno studio esplorativo

Giuseppe Alessio Platania¹, Claudia Savia Guerrera¹, Vittoria Torre¹, Francesco Maria Boccaccio¹, Alessia D'Antoni¹, Daniele Milton¹, Flavia Coco¹, Sabrina Castellano¹, Concetta Pirrone¹

¹ Università degli Studi di Catania, Dipartimento di Scienze della Formazione

Mini-talk · Sleep

Il Disturbo Depressivo Maggiore (MDD) è associato a compromissioni che vanno oltre i sintomi dell'umore, includendo deficit nel funzionamento psicosociale e alterazioni della regolazione biologica. Tra questi aspetti, le alterazioni dei ritmi circadiani rappresentano una componente rilevante ma ancora poco esplorata. Il presente studio ha analizzato le relazioni tra gravità dei sintomi depressivi, disregolazione dei ritmi biologici, qualità del sonno e funzionamento psicosociale in un campione clinico di pazienti con MDD moderato grave. Sono stati reclutati 61 pazienti ricoverati (età media = 45.75), ai quali sono stati somministrati strumenti standardizzati: Beck Depression Inventory II (BDI II), Biological Rhythms Interview of Assessment in Neuropsychiatry (BRIAN), Pittsburgh Sleep Quality Index (PSQI), and Functioning Assessment Short Test (FAST). I risultati hanno evidenziato che la gravità depressiva era maggiormente associata alla disregolazione dei ritmi biologici ($p \approx 0.52$) rispetto ai disturbi del sonno ($p \approx 0.34$), e moderatamente associata al funzionamento psicosociale ($p \approx 0.48$). La disregolazione circadiana era correlata sia alla qualità del sonno ($p \approx 0.38$) sia al funzionamento psicosociale ($p \approx 0.42$), con effetti su domini specifici quali autonomia, relazioni interpersonali e tempo libero. Inoltre, i ritmi biologici mediano parzialmente la relazione tra sintomi depressivi e funzionamento psicosociale ($\beta = 0.142$), spiegando circa il 31.5% dell'effetto totale, pur mantenendosi significativo l'effetto diretto ($\beta = 0.309$). Questi risultati suggeriscono che la disregolazione circadiana rappresenta un meccanismo chiave nel collegare la gravità della depressione alla compromissione funzionale. L'integrazione di interventi cronobiologici nella

pratica clinica potrebbe migliorare sia i sintomi sia il funzionamento quotidiano.

266. Unpacking conspiracy mentality through Cross-Country Predictors

Victoria Popa¹, Caterina Senette²

¹ Università di Pisa, Dipartimento di Informatica

² IIT-CNR

Intervento in simposio · Social cognition

Conspiracy theories are often defined as beliefs in covert and powerful actors pursuing hidden, frequently unlawful goals. Beyond being mere cognitive distortions, they carry significant societal implications, including undermining democratic institutions, fostering distrust in science, and contributing to radicalization. Importantly, the prevalence and impact of conspiracy thinking vary across cultural and national contexts, making cross-country research essential. In this study, we shift the focus from specific conspiracy beliefs to conspiracy mentality, conceptualized as a general psychological disposition. Using data from the Comparative Conspiracy Research Survey (CCRS, 2023), which includes over 8,000 respondents across eight countries, we examine how individual, psychological, and sociopolitical factors jointly shape this mindset. Through a combination of descriptive and inferential analyses, we investigate key research questions related to socio-demographic characteristics, cognitive and emotional traits, and political attitudes. Our findings both confirm and extend existing literature: some predictors, such as populist attitudes, show consistent effects across countries, while others are strongly context-dependent. By adopting a cross-national perspective and focusing on general conspiracy mentality rather than specific narratives, this work provides a more comprehensive and generalizable account of the drivers of conspiratorial thinking. Unlike many previous studies based on single-country samples or social media data, our approach relies on population-level survey data, offering broader insights into how conspiracy thinking emerges and varies across societies.

267. The lie in the eyes: ocular indicators and machine-learning models with a cognitive load paradigm to detect lying

Alice Naomi Preti¹, Giulia Melis², Barbara Barbieri³, Giuseppe Sartori², Franca Crippa³, Stefano Zago⁴, Nadia Bolognini⁵

¹ Department of Medicine and Surgery, University of Milano-Bicocca

² Department of General Psychology, University of Padova, Padova, Italy

³ Department of Psychology, University of Milano-Bicocca, Milan, Italy

⁴ Neurology Unit, Foundation IRCCS Ca' Granda Hospital Maggiore Policlinico, Milan, Italy

⁵ Neuropsychology Laboratory, Department of Neurorehabilitation Sciences, IRCCS Istituto Auxologico Italiano, Milan, Italy

Intervento in simposio · Attention, perception and consciousness

Behavioural and ocular markers may provide reliable indicators of lying, although their combined use to detect lying has been underexplored. This study examined whether eye-tracking could contribute to the detection of lying using an Induced fake identity (IFI) paradigm, considering the association between pupillary dynamics, eye-blinks and behavioural indices of lying. Machine learning was also used to assess the predictive value of pupil size changes under cognitive load for detecting deceptive answers. Fifty-seven healthy adults underwent an IFI task, randomized to lying or truth-telling conditions. During the task, they were asked to respond to expected, unexpected or control questions assuming or not a fake identity, while their

ocular (pupil dilation and eye-blinks) and behavioural (reaction times and errors) were measured. Liars exhibited significantly longer reaction times, especially in responding to unexpected questions, reflecting increased cognitive load during deception; consistently, liars showed larger pupil dilation in response to unexpected questions, as compared to truth-tellers, but no group differences with respect to eye-blinks. Correlation analyses revealed associations between ocular and behavioural responses in truth-tellers, which was absent in liars, indicating a decoupling between physiological and cognitive processes during lying. Finally, machine-learning classifiers leveraging behavioural and physiological features achieved up to 84% accuracy in distinguishing liars from truth-tellers. Lying is indexed by a reliable pattern of slowness of responses to identity-related unexpected questions, which is paralleled by increased pupil dilation; together, behavioural (RTs) and physiological (pupil dilation, eye-blinks) markers can be used to accurately classify liars.

268. Does language shape numerical representations? Cross-linguistic evidence from Vector- Space Models

Paola Previtali¹, Vittoria Dentella¹, Christina Manouilidou², Tomaso Vecchi¹, Marco Marelli³, Luca Rinaldi¹

¹ Università di Pavia

² University of Ljubljana

³ Università di Milano-Bicocca

Poster · Space, time and number

Recent evidence suggests that natural language data (i.e., vector distance from distributional semantic models) can predict behavioural performance in number comparison tasks, supporting the idea that linguistic experience can shape the mental representation of numbers. The current study investigates i) whether this effect is specifically tuned to one's native language; ii) whether it can be replicated across different linguistic populations; and iii) whether linguistic estimates can even shape non-symbolic processing. Across five experiments (group of speakers involved: Italian, Slovenian, Swedish, Polish, and Dutch), we tested whether native-language-based models better predict performance in symbolic and non-symbolic number comparison tasks. In particular, we estimated performance from participants' native language estimates as well as from other languages (n=15). In the symbolic task, native-language models generally provided better predictions than most non-native alternatives, although in some cases they did not consistently outperform all other language-based models. Surprisingly, the same pattern was observed also for the non-symbolic task. Overall, these findings suggest that native language experience contributes to shaping symbolic and non-symbolic numerical representations, while also indicating that this effect may not be entirely uniform across languages. Further research is needed to clarify the conditions under which linguistic structure influences numerical cognition and to assess the generality of this pattern across a wider range of linguistic backgrounds.

269. Concurrent and directional interneural synchrony change across experimentally perturbed parent-infant interactions

Livio Provenzi¹, Elena Capelli¹, Miriam Paola Pili¹, Valentina Riva², Lucia Billeci³, Giorgia Procissi³, Renato Borgatti¹

¹ Università di Pavia

² IRCCS E. Medea

³ CNR, Pisa

Intervento in simposio · Social cognition

Infancy is a sensitive period during which social interaction shapes development and learning. While research has characterized behavioral attunement in parent–infant dyads, hyperscanning enables the investigation of inter-neural synchrony (INS). The present study leverages EEG hyperscanning to examine concurrent and directional INS as markers of dyadic co-regulation, and how these measures are modulated by interactional perturbation. Fifty-eight parent–infant dyads completed an adapted Face-to-Face Still-Face (FFSF) procedure while EEG was recorded simultaneously. Concurrent and directional INS were quantified using weighted Phase Lag Index (wPLI) and Partial Directed Coherence (PDC) in the alpha (6–12 Hz) and theta (3–7 Hz) bands. Infant negative emotionality and maternal behaviours were coded from videos. wPLI increased following perturbation in both alpha ($F(1,57) = 6.80$, $p = 0.012$) and theta bands ($F(1,57) = 12.86$, $p < 0.001$), spanning multiple frontal, central and parietal connections. PDC connections were predominantly infant-led during Play ($W \geq 814$, $p < 0.05$), with a reduction in infant-to-parent connectivity from Play to Reunion in dyads with higher infant negative emotionality. INS in caregiver–infant dyads was sensitive to interactive perturbation, with concurrent and directional coupling showing reorganization across episodes, potentially shedding light on how dyadic coordination is flexibly shaped.

270. Flanker arrows reveal strong spatial–numerical associations: overcoming the bimanual paradigm

Valter Prpic¹, Stefano Pileggi², Federico D'Atri², Mauro Murgia², Carlo Fantoni², Dražen Domijan³

¹ Department of Theoretical and Applied Sciences, eCampus University

² Department of Life Sciences, University of Trieste

³ Department of Psychology, University of Rijeka

Mini-talk · Space, time and number

Spatial–Numerical Associations (SNAs) are widely considered evidence that numbers are represented in a spatial format. However, it remains debated whether this relationship reflects a purely conceptual link or instead depends on task-dependent processing constraints. Here we investigated the degree of automaticity of SNAs using a modified flanker paradigm in which numerical (digits) and spatial (arrows) information were presented simultaneously. In Experiment 1, arrows were entirely task-irrelevant while participants performed magnitude classification and parity judgment tasks. In this condition, no reliable SNAs emerged. In Experiment 2, participants were required to process arrow direction and numerical information conjunctively. In this condition, we observed remarkably strong SNAs, with compatibility effects exceeding those typically reported in both bimanual and unimanual paradigms. These findings provide no evidence for a purely conceptual spatial–numerical link. Instead, they support a graded model of automaticity, according to which the strength of SNAs depends on the extent to which spatial and numerical codes are explicitly

and semantically processed. When either spatial or numerical information is task-irrelevant, SNAs are absent or weak; when both dimensions are jointly processed, SNAs become robust and markedly amplified. Overall, the modified flanker paradigm offers a powerful tool for investigating SNAs, revealing large and reliable effects and providing a promising framework for studying individual differences and experimental modulations in spatial–numerical processing.

271. Immediate Effects of Game-Induced Engagement on Implicit and Explicit Memory in Preschool Children

Giovanna Puccio¹, Sandro Franceschini¹, Sara Bertoni², Viviana Trezza³, Andrea Facoetti¹

¹ University of Padua, Department of General Psychology

² University of Padua, Department of General Psychology, University of Bergamo, Department of Human and Social Sciences

³ University of Roma Tre, Department of Science

Poster · Memory

Emotions and memory are linked through neural networks such as the amygdala-hippocampus system, the central executive and salience system. Although emotional arousal promotes long-term memory consolidation, its effects on short-term memory - especially during development - remain understudied. Action video games, by inducing a high level of arousal and promoting positive emotions, may influence declarative memory. This study examined the short-term effects of gameplay and positive emotions on visual declarative memory. Thirty-one children in their final year of preschool played either an action video game (Mario Kart) or a puzzle board game (Tangram) for 30 minutes, in randomized order. Visual declarative memory was assessed via a modified Novel Object Recognition task. Measures included behavioral data (accuracy, response times), eye-tracking (fixations, fixation time, latency), and self-reported emotions. Action game players, unlike puzzle players, showed enhanced novelty preference and faster orienting to novel stimuli after gameplay. Gameplay also significantly improved stimulus recall in action game players: children demonstrated better recognition of both pre- and post-session stimuli—likely benefiting from repeated exposure—and recognized post-gameplay images more quickly than puzzle players. In addition to these game-specific characteristics, action gamers reported greater enjoyment and more positive emotions, suggesting that emotional engagement may account for part of the observed performance differences. In summary, action games appear to enhance short-term visual memory via interactions between attention and emotion. These results support dynamic models of emotion–attention–memory interactions and suggest applications in educational and clinical neurocognitive training.

272. Il ruolo della self-deception nelle self-defining future projections

Federico Puleo¹, Fabiana Battista², Arnaud D'Argembeau³, Antonietta Curci⁴

¹ Università degli Studi di Bari Aldo Moro

² Università Telematica Pegaso, Dipartimento di Psicologia e Scienze della Salute

³ Università di Liegi, Dipartimento di Psicologia

⁴ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

Mini-talk · Memory

L'autoinganno (self-deception) è un atto di natura psicologica che può portare le persone a convincersi di falsità circa sé

stessi. Le ragioni per cui le persone ricorrono all'autoinganno possono essere molteplici, ad esempio per mantenere una immagine positiva di sé o per rendere più facile ingannare gli altri. Mentire a sé stessi può alterare i ricordi autobiografici, promuovendo il recupero e il mantenimento di dettagli positivi, a discapito di quelli giudicati negativi per il proprio senso di identità. Il presente studio intende indagare il ruolo della self-deception nell'immaginazione di eventi significativi per il proprio futuro (self-defining future projections). A 120 partecipanti è stato chiesto di immaginare sei eventi autobiografici significativi, tre con valenza positiva e tre con valenza negativa. Successivamente è stato chiesto di valutare quanto credevano che gli eventi potessero realmente accadere e quale fosse la credenza circa la loro accuratezza. I partecipanti hanno, inoltre, fornito una valutazione di alcune caratteristiche degli eventi riportati (sensazione di rivivere l'evento, valenza ed intensità emotiva). Infine, hanno compilato il Self-Deception Questionnaire per avere una misura della disposizione individuale alla self-deception. I risultati indicano una relazione positiva tra self-deception e credenza dell'accadimento ($\beta = 0,20$) e accuratezza degli eventi negativi ($\beta = 0,23$). Di contro, si rileva una relazione negativa tra self-deception e credenza circa l'accadimento ($\beta = 0,20$) e accuratezza degli eventi positivi ($\beta = 0,28$). I risultati hanno implicazioni in particolare per l'ambito forense, i risultati apportano informazioni utili ai professionisti che sono chiamati a supportare il giudice nella valutazione della credibilità di un testimone.

Q

273. Modality- and Frequency-Specific Effects of Sensory Alpha Entrainment on Neural Dynamics and Visual Performance

Brendon Qela¹, Gianluca Marsicano², Luca Tarasi³, Sara Giovagnoli³, Vincenzo Romei³, Caterina Bertini³

¹ Department of Psychology "Renzo Canestrari", University of Bologna, Italy.
Centre for Studies and Research in Cognitive Neuroscience, 2 3.

Psychology Program, Division of Science, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

³ Department of Psychology "Renzo Canestrari", University of Bologna, Italy

Poster · Attention, perception and consciousness

Neural oscillations in the alpha range (7–13 Hz) are linked to visual processing. Modulating alpha parameters, through rhythmic sensory stimulation (sensory entrainment), can improve visual performance. This study investigates whether entrainment delivered through different sensory modalities, at frequencies around the individual alpha frequency (IAF) differentially affects visual performance in terms of temporal resolution or contrast sensitivity. Participants underwent a double flash illusion (DFI) task, assessing visual temporal resolution, and a contrast detection (CD) task, measuring contrast sensitivity. Each trial was preceded by 1500 ms of auditory (A), visual (V) or audiovisual (AV) entrainment at IAF or at IAF $\pm$ 2. In both tasks, oscillatory activity during and immediately after entrainment showed a significant modulation of phase-locking value (PLV) peak, irrespective of modality, but depending on the entrainment frequency, with reduced PLV-peak induced by IAF-2 stimulation and an increased PLV-peak induced by IAF+2 stimulation, compared to PLV-peak induced by IAF stimulation. Moreover, PLV-strength

significantly varied depending on the entrainment modality, with increased PLV-strength induced by V and AV stimulation, compared to A. In terms of visual performance, the PLV-peak showed a significant positive correlation only with contrast sensitivity in the CD task, while the PLV-strength was positively correlated with temporal resolution in the DFI task. Alpha entrainment differentially shapes neural dynamics and visual performance depending on frequency and modality, supporting a functional dissociation of oscillatory parameters and highlighting the potential of targeted sensory stimulation to modulate specific components of visual perception.

R

274. Understanding Intent in Face-to-Face Communication: Behavioral and Gaze Markers

Giuseppe Rabini¹, Danilo Onde², Ambra Ferrari³, James Trujillo⁴, Judith Holler⁵, Francesco Pavan⁶, Stefania Benetti⁶

¹ Università di Trento, CIMEC (Center for Mind/Brain Sciences)

² Università di Trento, Dipartimento di Psicologia e Scienze Cognitive

³ Università di Trento, CIMEC (Center for Mind/Brain Sciences)

⁴ University of Amsterdam, Faculty of Science

⁵ University of Nijmegen - Donders Institute for Brain Cognition and Behaviour

⁶ University of Trento, CIMEC (Center for Mind/Brain Sciences)

Poster · Social cognition

During face-to-face communication, listeners must rapidly integrate facial and vocal cues to infer the speaker's communicative intent. While multisensory integration has been extensively studied in low-level perception (e.g., McGurk effect), it remains unclear how dynamic communicative signals are processed and integrated during face-to-face communication. Here, we adapt the classic ventriloquism framework to the communicative-intention domain and test integration processes and gaze-related signatures supporting intent inference during stimulation and modality-specific readout at response. In a behavioural eye-tracking study (N=35), participants viewed a virtual avatar that produced a one-word utterance paired with facial expressions. Auditory (pitch) and visual (eyebrow movements) cues were manipulated along a four-step continuum from statement to question, generating congruent and incongruent audiovisual combinations. Critically, a post-stimulus cue instructed participants to classify the utterance based on either visual or auditory information. Eye movements were analysed using time-locked fixation dynamics, region-of-interest measures, and trial-by-trial regressions linking gaze allocation to choices. Preliminary analyses revealed that behavioural performance was higher for congruent than incongruent trials, with accuracy selectively reduced at intermediate audiovisual discrepancies and overall higher for visual- than auditory-based judgments. Reaction times were longer for auditory-based responses and peaked at intermediate disparities. In incongruent trials, responses were biased toward visual information, revealing an asymmetric cross-modal influence. Both basic and pattern-based eye-movement metrics revealed condition-specific features, with modality-dependent gaze behaviors emerging during response. Together, these findings provide initial evidence that ventriloquist-like biases extend to social-pragmatic meaning, supporting flexible integration during communicative intention inference.

275. Adolescent Well-Being and Need Satisfaction at School: A Dual-Country Validation of the Basic Psychological Needs Satisfaction and Frustration Scale

Giulia Raimondi¹, Sara Manganelli², Elisa Cavicchiolo³, Fabio Alivernini⁴

¹ BeSSA Department, Wellbeing, Health and Environmental Sustainability, Sapienza University of Rome, Via delle Fontanelle 02100 Rieti, Italy

² Department of Developmental and Social Psychology, Sapienza University of Rome, Via dei Marsi 78, 00185 Rome, Italy

³ Department of Systems Medicine, Tor Vergata University of Rome, Via Montpellier 1, 00133 Rome, Italy

⁴ Department of Developmental and Social Psychology, Sapienza University of Rome, Via dei Marsi 78, 00185 Rome, Italy

Mini-talk · Methodology

Students' emotional well-being at school is strongly affected by the satisfaction and frustration of basic psychological needs. However, existing instruments do not adequately distinguish between different relational contexts, limiting insight into how school experiences shape adolescents' well-being. The present study aimed to validate a refined, school-specific version of the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS), with particular attention to the role of relationships with teachers and classmates. A total of 1,523 students from Italy and the United Kingdom (mean age = 12.84; 49.6% female) completed the refined BPNSFS along with measures of positive and negative affect at school. The revised instrument separately assessed the need for relatedness with classmates and teachers. Confirmatory factor analyses supported an eight-factor structure, and measurement invariance was established across age, gender, socio-economic status, and country, supporting the robustness of the scale across groups. Results also demonstrated meaningful associations between need satisfaction and students' emotional well-being at school. Specifically, autonomy, competence, and classmate-relatedness satisfaction were positively linked to positive affect, whereas competence and relatedness frustration were associated with negative affect. Furthermore, developmental differences emerged: adolescents reported higher autonomy satisfaction and frustration, greater competence frustration, and more difficulties in peer and teacher relationships compared to younger students. Overall, these findings highlight the importance of distinguishing sources of relatedness in understanding students' well-being and underscore the central role of need satisfaction in promoting positive emotional experiences at school. The refined scale represents a useful tool for identifying age-specific needs and informing targeted educational interventions.

276. Intrinsic Brain Connectivity and Sustainable Decision Making: A Resting-State fMRI Study

Leonardo Rassouli Baghi¹, Maria Arioli¹, Letizia Richelli¹, Nicola Canessa

¹ IUSS Pavia

Poster · Social cognition

Unveiling the neurocognitive bases of sustainable behaviour is essential for promoting environmentally responsible decision-making. Complementing task-based evidence, we examined whether intrinsic brain activity predicts sustainable aptitude using resting-state fMRI connectivity within and between resting-state networks (RSNs). After an 8-minute resting-state scan, fifty-nine healthy adults performed the FISH game, a validated resource dilemma contrasting cooperative and exploitative harvesting strategies. RSNs were identified

using group Independent Component Analysis. Participants' Individual Efficiency (IE) score—reflecting the ability to maximise gains while preserving the shared resource over time—was correlated with the intensity of RSN spatial maps (intra-network connectivity) and seed-to-voxel functional connectivity (inter-network connectivity). Higher IE was associated with lower intra-network connectivity in limbic (right amygdala), salience (bilateral anterior insula and dorsal anterior cingulate cortex), and fronto-temporal (right temporal cortex) networks. Seed-to-voxel analyses showed that higher IE was linked to reduced connectivity from the left anterior insula to the left posterior insula and dorsal anterior cingulate cortex, and from the right anterior insula to the medial occipital cortex. These findings suggest that sustainable aptitude is hindered by intrinsic responsiveness of networks amplifying the salience of short-term costs of sustainable choices. Individual differences in sustainability may reflect stable preference functions rather than transient responses.

277. The relevance of perception: subjective sleep quality as a predictor of daily mood

Anna Ratti¹, Giorgia Degasperis¹, Luca Menghini¹, Valentina Cardì¹, Nicola Cellini¹

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

Poster · Sleep

Daily fluctuations in sleep quality reliably predict next-day mood, but whether this association is driven by subjective perception or objective sleep parameters remains unclear. This work examined whether perceived sleep quality and actigraphy-derived sleep efficiency (SE) independently predict next-day hedonic tone in healthy young adults. Seventy-three participants (54 females; M = 23.32 years, SD = 2.30) completed a 14-day protocol combining ecological momentary assessment (EMA) and wrist actigraphy (MotionWatch 8). Each morning, participants rated perceived sleep quality (0–8 Likert) and hedonic tone (three items from the Multidimensional Mood Questionnaire). SE was derived from actigraphy as the ratio of total sleep time to time in bed. Linear mixed models were estimated using a model-comparison approach (wAIC, LRT), with within-person predictors centered on individual means. A model including perceived sleep quality significantly outperformed the null model, whereas adding SE yielded no improvement. Perceived sleep quality significantly predicted hedonic tone. Findings indicate that subjective perception of sleep, rather than objective sleep efficiency, drives daily mood fluctuations in healthy young adults. This dissociation suggests that cognitive and emotional processes shaping sleep perception, rather than sleep architecture alone, may represent the key pathway linking sleep and affect.

278. Learning Through Action: How Observed Gestures Support New Word Acquisition

Claudia Repetto¹, Elisa Scerrati², Matilde Colombo³, Emma Lancini⁴, Alice Cancer⁵

¹ Dip. Psicologia, Università Cattolica del Sacro Cuore, Milano

² Department of Psychology and Health Sciences, Pegaso University

³ Università Cattolica del Sacro Cuore, Facoltà di Psicologia, Milano

⁴ Università Cattolica del Sacro Cuore, Facoltà di Psicologia, Brescia

⁵ Dip. Psicologia, Università Cattolica del Sacro Cuore Milano

Intervento in simposio · Language, reading and music

The embodied cognition framework proposes that cognitive processes, including language, are grounded in sensorimotor systems. Research on second language acquisition has shown that engaging the motor system during word encoding —

through gesture observation or execution — enhances learning. Virtual reality (VR) offers a unique opportunity to exploit these mechanisms: by presenting actions from a first-person perspective, VR allows users to experience themselves as the agent performing a gesture, even without physical movement. The present study investigated the effect of action observation perspective on the acquisition of new vocabulary in Finnish. Thirty-nine young adults learned 21 Finnish verbs under three encoding conditions: 360° videos (first-person perspective), frontal videos (third-person perspective), and control videos (a speaker pronouncing the words with consistent lip movements). In the action conditions, the Finnish label followed by its Italian translation were presented auditorily, time-locked to the onset of the depicted action. The encoding conditions were delivered in counterbalanced blocks, each comprising two repetitions per verb. Recall and recognition were tested immediately after each block. Linear Mixed Models (LMMs) were applied to reaction times in the recognition task, while Generalized Linear Mixed Models (GLMMs) were applied to accuracy scores for both recall and recognition tasks. Results showed that both the frontal and 360° conditions improved recall and reduced recognition errors compared to the control condition. No significant effect of encoding condition was found on recognition reaction times. These findings suggest that action observation facilitates new word learning regardless of the perspective adopted, even after very brief encoding.

279. Nature-Guided Imagery for Affective Regulation in Older People with Cognitive impairment

Elisabetta Ricciardi¹, Claudia Mirengi², Rosa Napoletano², Sergio Traficante², Luigi Tinella³, Alessandro Caffò², Giuseppina Spano³, Andrea Bosco², Antonella Lopez⁴

¹ Università degli Studi di Bari, Dipartimento di Medicina di Precisione e Rigenerativa e Area Jonica

² Università degli Studi di Bari, Dipartimento di Scienze della Formazione, Psicologia e Comunicazione

³ Università Telematica Pegaso, Dipartimento di Psicologia e Scienze della Salute

⁴ Università degli Studi del Molise, Dipartimento di Scienze Umanistiche, Sociali e della Formazione

Mini-talk · Life cycle (e.g., development and aging)

Neuropsychiatric symptoms are highly prevalent in individuals with cognitive impairment and significantly impact quality of life and caregiver burden. These include disturbances in mood and affect, such as depression, anxiety, and emotional dysregulation. Mindfulness-based interventions have shown beneficial effects on mental health. However, nature-based guided imagery, a mindfulness-based intervention combining breathing practices with guided imagery of natural environments, remains largely unexplored in this population. The present study investigated the effects of a brief nature-based guided imagery intervention on mood and affect in older adults with cognitive impairment. A multiple single-case design was employed to examine individual patterns of change over time. Participants completed brief guided sessions integrating breathing and listening to a guiding voice narrating a journey in a natural environment, with vivid references to stimuli that are easy to imagine and elicit mental imagery. Repeated self-reported measures of mood and affect were collected across the study period. Analyses were conducted at the individual level. Results showed that participants with relatively higher cognitive functioning exhibited improvements in mood, whereas those with more severe impairment showed limited changes. Improvements in affect emerged among participants

with fewer neuropsychiatric symptoms. Overall, nature-based guided imagery appears to be a feasible non-pharmacological approach to support affect regulation, with effects influenced by cognitive functioning and neuropsychiatric profile.

280. Affective expression and self-regulatory behaviors shape infants' neural processing of maternal cues

Silvia Rigato¹, Giada Basset²

¹ University of Essex, Department of Psychology

² Università degli Studi di Milano-Bicocca, Dipartimento di Psicologia

Intervento in simposio · Social cognition

Recent literature has examined whether and how infants' neural processing of their mother's face can be influenced by individual characteristics, such as temperament (Rigato et al., 2025), or by responses to negative experiences, such as maternal separation (Swingler et al., 2010). However, it remains unclear whether and how infants' ability to regulate their behavior during and after a positive affect-eliciting interaction with their mother is linked to the neural processing of her face. The aim of this study was to examine whether infants' temperament (as measured with the Infant Behavior Questionnaire-Revised, IBQ-R; Putnam et al., 2014) and their behavior (affective expression and self-regulation) during a peekaboo game with their mother are associated with the infant face-sensitive ERP components (N290, P400 and Nc). A sample of 45 5-7 month-old infants took part in this study. Infants first looked at pictures of their mother's and a stranger's face on a screen while wearing a 128-electrodes EEG cap that recorded their brain signal continuously. Subsequently, mothers played the peekaboo game with their infant for two minutes. This was followed by a release phase which consisted of two minutes where mothers were not interacting with their infant. Preliminary findings highlight the dynamic interplay between affective expression and self-regulatory behaviors in modulating infants' neural responses to maternal cues.

281. Are hyper-emotional individuals better than controls at assessing consistency but only for contents pertinent their potential illness?

Febronia Riggio¹, Amelia Gangemi¹, Monica Bucciarelli², Philip Nicholas Johnson-Laird³

¹ Università degli Studi di Messina, Dipartimento COSPECS

² Università degli Studi di Torino, Centro di Scienza Cognitiva and Dipartimento di Psicologia

³ Princeton University

Intervento in simposio · Reasoning and abstract cognition

The model theory predicts that emotionally salient contents prompt individuals to conduct a more comprehensive searches for possibilities than neutral topics. Previous studies have confirmed this prediction, showing that hyper emotional individuals reason more accurately about material related to their potential vulnerabilities in comparison to healthy controls, while no reliable group differences emerge for neutral contents (Gangemi, Mancini, & Johnson Laird, 2013; Johnson Laird, Mancini, & Gangemi, 2006; Mancini, Gangemi, & Johnson Laird, 2007). The present study examines whether trait anxiety modulates reasoning performance in tasks requiring consistency judgments. A large initial sample was screened using the State-Trait Anxiety Inventory, from which two groups (high trait anxiety and low trait anxiety participants) were selected. Participants completed 16 trials in which they judged whether pairs of assertions could both be true. The problems

varied in emotional content (anxious vs. neutral), logical form (sentential vs. quantified), and consistency (consistent vs. inconsistent). Overall accuracy was high across conditions, although clear differences emerged as a function of problem type: quantified problems were easier to solve than sentential ones, suggesting the involvement of structural complexity. Moreover, individuals with elevated trait anxiety showed higher accuracy than controls when evaluating anxious sentential problems, whereas no reliable group differences appeared for neutral materials. This pattern aligns with model theoretic predictions, indicating that anxiety related content selectively enhances reasoning in anxious individuals.

282. Oltre la privazione materiale: dimensioni del funzionamento individuale nel contrasto alla vulnerabilità

Roberta Risola¹, Filomena Colamussi, Alessandro Oronzio Caffò¹

¹ Università degli Studi di Bari Aldo Moro, Dipartimento Forpsicom

Mini-talk · Health, sport and wellbeing

Il contributo presenta un'analisi empirica dei dati di servizio del Pronto Intervento Sociale (PIS), con l'obiettivo di esplorare la struttura latente dei bisogni intercettati e di testare la possibilità di integrare indicatori di funzionamento individuale nella valutazione dei servizi di contrasto alla povertà. Il campione comprende 275 beneficiari, presenti in un database costruito per finalità amministrative e operative su registrazioni effettuate dagli operatori nel corso della presa in carico. Sulle frequenze di 19 categorie di intervento è stata condotta un'Analisi delle Componenti Principali per individuare configurazioni ricorrenti di intervento. I punteggi fattoriali sono stati successivamente analizzati tramite MANOVA rispetto a variabili sociodemografiche, di accesso a misure di welfare e indicatori esplorativi di autonomia, competenza e relazionalità, ispirati alla Self-Determination Theory (SDT). L'analisi ha evidenziato due principali configurazioni di interventi: una associata a domanda ricorrente e presa in carico continuativa, e una legata a fragilità materiale acuta e privazione. Le analisi multivariate mostrano una limitata capacità esplicativa delle variabili, con effetti significativi solo per il genere e per la presenza di sussidi a livello complessivo. Gli indicatori di funzionamento individuale non mostrano associazioni statisticamente robuste, pur risultando teoricamente coerenti con le dimensioni di vulnerabilità osservate nei contesti di intervento. I risultati supportano l'ipotesi che i dati di servizio contengano informazioni utili per identificare pattern di bisogno non riducibili a variabili economiche. L'integrazione di indicatori ispirati alla SDT rappresenta una prospettiva per lo sviluppo di misure di esito per contribuire al rafforzamento dei modelli di valutazione nei servizi di contrasto alla povertà.

283. Effect of self-perception of aging, stress, and cognitive reserve on cognitive functioning in caregivers of patients with cognitive decline

Ezia Rizzi¹, Nicole Pezzotta¹, Chiara Villa², Romina Combi², Roberta Daini¹

¹ Dipartimento di Psicologia, Università degli Studi di Milano-Bicocca

² Dipartimento di Medicina e Chirurgia Università degli Studi di Milano-Bicocca

Intervento in simposio · Life cycle (e.g., development and aging)

Taking care of patients with cognitive decline is a burdensome task that can expose caregivers to physical, psychological and financial stress. Moreover, being a caregiver while also facing

age-related changes, as occurs in spouses of patients with dementia, may expose individuals to greater vulnerability, with potential negative effects on cognitive functioning. On the other hand, there are also protective factors that can mitigate the impact of chronic stress on individual well-being. This study aimed to assess whether caregivers experience higher levels of stress compared to controls and whether cognitive reserve (CR) and self-perception of aging (SPA) mediate the effect of stress on cognitive functioning. Eighty-eight participants (mean age 72 years) included spouses of patients with dementia and age-matched spouses of neurologically healthy controls. All participants underwent neuropsychological tests to assess cognitive functioning, scales and questionnaires for psychological well-being, and saliva samples were collected to measure physiological stress levels. Results suggested a higher level of perceived stress and a tendency towards greater evening stress in the caregivers compared to the control group. We did not find differences in the cognitive functioning. Nonetheless, we confirmed the role of CR in cognitive maintenance over time, and we found a relationship with the self-perception of aging: as the CRIQ score increases, negative age-related perceptions decrease. Otherwise, the self-perception of aging affects the performance in some neuropsychological tests. In conclusion, aging is a process that requires a multifactorial approach and a greater understanding of its complex dynamics to implement effective interventions and improve people's quality of life.

284. Yoga practice, emotional regulation, and cognitive function: a pilot study

Martina Rizzuti¹, Erica Berretta¹, Valeria Gosti², Marco Clemenzi³, Chiara Baglioni⁴, Laura Serra¹, Francesca Gelfo¹

¹ Università degli Studi Guglielmo Marconi; Fondazione Santa Lucia IRCCS

² Università degli Studi Guglielmo Marconi

³ Fondazione Santa Lucia IRCCS

⁴ Università degli Studi Guglielmo Marconi; University of Freiburg

Poster · Health, sport and wellbeing

Yoga is a mind-body practice associated with benefits in emotional and cognitive function. However, evidence regarding the impact of the yoga practice on cognitive and emotional functioning in healthy adults remains limited, particularly with regard to long-term practice. In this pilot study, we aimed to explore the potential association between yoga and cognitive and emotional function in healthy adults (ages 18–64). Yoga practitioners (n=10; 7 females, 3 males; M=41.6, SD=12.7) and non-practitioners (n=19; 10 females, 9 males; M=28.5, SD=4.3) underwent a battery of neuropsychological tests to assess attention, memory, executive functions, verbal fluency, and emotional regulation. Descriptive analyses were conducted to characterize the sample and examine any differences between the groups. Comparisons revealed no significant differences between groups in measures of cognitive or emotional regulation. Separate correlational analyses were conducted within each group. In the yoga group, significant positive association emerged between emotional regulation (Emotion Regulation Questionnaire-ERQ) and executive functioning. Better performance on the Wisconsin Card Sorting Test was associated with higher expressive suppression, allowing for the detection of an effective functional process. No significant associations were observed between emotional regulation and cognitive performance in the control group. While no differences were found between the groups, pilot results suggest that yoga practitioners may exhibit more adaptive emotional regulation, which appears to be associated with cognitive functioning.

Future studies should be conducted on larger samples to further investigate the relationship between yoga and cognitive and emotional functions.

285. Uncovering resilience pathways during financial hardships: Evidence from a daily diary study

Matteo Robba¹, Carmela Aprea¹, Michela Zambelli², Paola Iannello², Angela Sorgente²

¹ University of Mannheim

² Università Cattolica del Sacro Cuore

Poster · Emotions and motivation

Uncovering resilience pathways during financial hardships: Evidence from a daily diary study

286. Gustatory Imagery and Food Desire: When the mind teases the taste buds

Benedetta Rollo¹, Mariaconcetta Nieli¹, Gianluca Malatesta¹, Anita D'Anselmo¹, Luca Tommasi¹

¹ University "G. d'Annunzio" of Chieti-Pescara, Department of Psychology

Mini-talk · PANEL (no track)

Numerous studies have shown that food craving, defined as an intense and specific desire for certain foods (Pelchat, 2002), is a predominantly cognitive and multisensory experience in which mental imagery plays a central role (Kemps & Tiggemann, 2015). This study investigated the role of gustatory imagery in modulating food desire elicited by verbal cues representing foods with varying caloric content. We compared two modalities of mental imagery - visual and gustatory - and assessed their effect on immediate food desire. Moreover, we analyzed the relationship between imagery vividness and subjective levels of food craving. Participants completed an online ad-hoc questionnaire that included the randomized presentation of words representing both high- and low-calorie foods (HC – LC). For each word, they rated the vividness of the elicited visual imagery, the vividness of the elicited gustatory imagery, and the intensity of the desire to consume the food at that specific moment. In addition, participants completed the Food Craving Questionnaire–State. The results indicated significant associations between food craving, mental imagery, and food desire, with some differences depending on the caloric content of the stimuli. Although visual imagery appeared on average more vivid, gustatory imagery emerged as a predictor of food (HC or LC). Overall, the results suggest that gustatory imagery plays a key role in the activation of food desire, and highlight potential applications for interventions leveraging mental imagery in eating behavior disorders.

287. Delusion-like thinking is associated with lower individual alpha peak frequency

Domenico Romanazzi¹, Luca Tarasi², Vincenzo Romei²

¹ University of Bologna, Department of Psychology,

² University of Bologna, Department of Psychology

Mini-talk · Attention, perception and consciousness

Schizotypy is a multidimensional personality construct capturing

subclinical expressions of psychosis-like traits that lie on a continuum with Schizophrenia-Spectrum Disorders (SSD). Despite growing evidence for shared neurobiological mechanisms, oscillatory parallels between schizotypy and schizophrenia remain poorly characterized. Individual Alpha Frequency (IAF), the peak frequency of alpha-band activity

(7-13 Hz), is consistently reduced in schizophrenia and has been linked to perceptual and cognitive dysfunction, as well as to alterations in information processing speed. Here, we tested whether this neural signature extends to subclinical schizotypal traits in a general population sample (N = 318), using the Schizotypal Personality Questionnaire and eyes-closed resting-state EEG. Results shows that lower IAF was selectively associated with magical thinking, a positive schizotypy trait reflecting paranormal beliefs, superstitions, and delusion-like ideation, over fronto-parietal regions. No associations were observed for negative or disorganized traits, nor for alpha power, indicating domain-specificity and suggesting that the observed effect is driven by frequency rather than oscillatory amplitude. Magical thinking indexes attenuated psychosis and is robustly linked to increased psychosis risk. Its association with an IAF signature like that observed in schizophrenia suggests that IAF may reflect a transdiagnostic neurophysiological marker, tracking psychosis vulnerability across the SSD spectrum, from subclinical expression to clinical illness. Notably, this effect was independent of alpha power, pointing to frequency-specific mechanisms. Together, these findings support the potential of neurophysiology-based approaches for early identification and risk stratification and further highlight the relevance of oscillatory dynamics as continuous markers of vulnerability beyond categorical diagnosis.

288. NeuroBehavioral Correlates of Cognitive Flexibility

Domenico Romanazzi¹, Luca Tarasi¹, Anna Pasini², Vincenzo Romei¹

¹ Università di Bologna, Dipartimento di Psicologia (sede di Cesena)

² Università di Bologna, Dipartimento di Filosofia di Bologna

Intervento in simposio · Attention, perception and consciousness

Predictive coding theory posits that decisions arise from the weighted integration of prior expectations and sensory evidence. Although individuals differ in how they combine these two sources of information, contextual demands may sometimes favor reliance on one source over the other. Under such conditions, effective decision-making may require shifting from an integrative to a selective strategy. Here, we investigated cognitive flexibility within a predictive coding framework by testing how individuals adjust decision strategies across changing contextual demands. 115 participants completed a reward-based perceptual decision-making task while electroencephalographic (EEG) activity was recorded. Prior expectations were manipulated on a trial-by-trial basis by varying target probability. Critically, the optimal strategy differed across contexts: in prior-driven contexts, greater reliance on prior information maximized performance, whereas in sensory-driven contexts, optimal performance required exclusive reliance on sensory evidence while minimizing the influence of prior expectations. Participants generally adapted their decision strategies to the task context, flexibly alternating between prior-driven and sensory-driven processing modes. At the neural level, these strategy shifts were accompanied by increased mid-frontal theta-band activity. To better link adaptive behavior to its neural correlates, we implemented a Bayesian-observer model that simulated task performance and compared its behavior with that of participants. This comparison yielded a single index of cognitive flexibility based on model fit, revealing that participants whose behavior more closely approximated the Bayesian observer's exhibited stronger theta activity. Overall, these findings indicate that cognitive flexibility

extends to predictive coding computations, supporting context-dependent adjustments in the relative weighting of sensory evidence and prior expectations.

289. Openness through the years: Tracking the adoption of open science practices after the reproducibility crisis

Daniele Romano¹, Nafiseh Shabani², Fidan Huseynzade², Silvia Gobbo², Giorgia Tosi²

¹ Università degli Studi di Milano-Bicocca

² Università degli Studi di Milano-Bicocca

Mini-talk · Methodology

Background: Over the past decade, the reproducibility crisis has exposed structural weaknesses in scientific practice (Open Science Collaboration, 2015). In response, open science has emerged as a broad framework aimed at improving the credibility, accessibility, and cumulative nature of research. However, openness is often operationalized in fragmented ways, focusing on single practices (e.g., open data or preregistration) rather than a multidimensional construct. Objectives: we developed a composite index to quantify the degree of openness of individual research articles. Methods: The index captures the presence of five core open science practices: preregistration, open access publication, open data availability, fully reproducible analyses (open-source software and shared analysis code), and fully reproducible materials (open-source software and complete availability of all research materials). Each article is scored based on the number of open science components it implements, yielding an intuitive cumulative measure of research openness. Using this index, we randomly sampled 100 research articles published across multiple years in *Personality and Social Psychology* and in *Journal of Experimental Psychology: Learning, Memory, and Cognition* to test whether openness has increased over time. We examined the association between year of publication and the Open Science Index to assess longitudinal trends in the adoption of open practices. Results: Preliminary results show that the adoption of Open Practices increased with time, however, some forms of openness still remain relatively rare. Overall, this work aims to document both the progress achieved in response to the reproducibility crisis and the persistent gaps that continue to limit full research transparency.

290. Bodily self-awareness across psychiatric conditions: insights from eating disorders and borderline personality disorder

Marcella Romeo¹, Carlotta Zampese¹, Livia Colle², Francesca Garbarini¹, Carlotta Fossataro¹

¹ Manibus Lab, Dipartimento di Psicologia, Università di Torino

² Dipartimento di Psicologia, Università di Torino

Intervento in simposio · Attention, perception and consciousness

Bodily self-awareness constitutes a core dimension of self-experience, grounded in the integration of multiple processes, including sense of body ownership (i.e., the feeling that one's own body belongs to oneself), sense of agency (i.e., the experience of being the author of one's own actions), self-recognition, and self-space representation. Altogether, these components form a dynamic, interactive system in which perceptual, sensorimotor, and cognitive signals continuously contribute to a coherent sense of self. The bodily self-awareness is typically taken for granted, being deeply tangled to every aspect of our daily life. Nonetheless, extended literature has described how it can be selectively disrupted in

several pathological conditions, both neurological and psychiatric. In the present talk, I will provide results of behavioral and neurophysiological paradigms designed to explore bodily self-awareness and its components along a continuum from healthy individuals to full-blown psychiatric conditions, encompassing subclinical traits. In this vein, eating disorders and borderline personality disorder represent particularly informative conditions, as disruption in bodily self-awareness lie at the core of their psychopathology, including both disorder-specific disturbances and shared features. Therefore, these conditions offer a unique opportunity to infer the normal functioning of bodily self-awareness addressing its alterations in pathological models. Crucially, by comparing the results across disorders, both transdiagnostic and disorder-specific features of bodily self-awareness will be discussed.

291. Falsi ricordi e distorsioni di giudizio sul contatto fisico: il ruolo del misinformation effect nelle testimonianze oculari

Flavia Rucci¹, Pasquale Zappimpulso², Antonietta Curci², Tiziana Lanciano², Fabiana Battista³, Ivan Mangiulli², Federico Puleo²

¹ Università degli Studi di Bari Aldo Moro

² Università degli Studi di Bari Aldo Moro

³ Università Pegaso

Poster · Memory

La memoria non costituisce una registrazione fedele degli eventi, è bensì un processo costruttivo e ricostruttivo suscettibile a influenze esterne. Il misinformation effect descrive come informazioni fuorvianti introdotte successivamente a un evento possano alterarne il ricordo. Tuttavia, il modo in cui tali distorsioni mnestiche interagiscano con la valutazione di episodi che implicano il contatto fisico resta ancora poco indagato. Il presente contributo rappresenta la seconda fase di uno studio precedentemente condotto. Il campione è composto da 130 partecipanti, a cui è stato presentato un video registrato in prospettiva soggettiva, così da consentire allo spettatore di osservare la scena come se stesse vivendo in prima persona l'interazione. Il video raffigurava un'interazione tra docente e studente caratterizzata dalla presenza di contatto fisico. Successivamente, i partecipanti sono stati sottoposti a una fase di rievocazione libera e guidata, accompagnata da giudizi valutativi sull'evento di intenzionalità, inappropriatezza, gravità, punizione da assegnare e gravità della punizione da assegnare. A distanza di un giorno, ai partecipanti è stata fornita un'informazione post-evento di natura neutra o fuorviante (indagine per molestie sessuali del docente nei confronti degli studenti), seguita da una seconda sessione di rievocazione e giudizi valutativi. Sono state, inoltre, rilevate misure di suggestionabilità interrogativa e di funzionamento esecutivo. I risultati indicano che l'esposizione al misinformation modifica i giudizi valutativi dell'evento, in linea con quanto emerso nel precedente studio che adottava una prospettiva di terza persona. Questi risultati confermano l'influenza del misinformation effect sulla memoria e sul giudizio, mettendo in luce importanti implicazioni per i contesti forensi.

292. Prospettiva Field e Observer nella Memoria Autobiografica: relazioni con la Navigazione Egocentrica e Allocentrica

Loredana Carmen Russo¹, Maddalena Boccia¹

¹ Sapienza Università di Roma, Dipartimento di Psicologia

Poster · Memory

La navigazione spaziale avviene attraverso strategie allocentriche o egocentriche, così come la rievocazione autobiografica in prima persona (prospettiva field, PF) o terza persona (prospettiva observer, PO)¹. Nonostante le evidenze sulla continuità filogenetica tra navigazione e memoria dichiarativa², mancano evidenze dirette di una relazione tra la prospettiva mnestica e quella navigazionale. Questo studio indaga se la prospettiva nella rievocazione sia associata alle strategie navigazionali e alle caratteristiche fenomenologiche del ricordo³. Un campione di giovani adulti (età media 23.6±2.59) ha rievocato 3 eventi autobiografici recenti e 3 remoti, in due sessioni. Nella prima (t1) le memorie venivano raccontate nella prospettiva spontanea individuale; nella seconda (t2) la prospettiva veniva invertita. Vividezza, emotività e difficoltà sono state misurate attraverso scale Likert. Sono inoltre state somministrate prove navigazionali⁴ e questionari sull'orientamento. È emersa una correlazione positiva tra preferenza per la PO e prestazioni navigazionali ($p=0.45$). Le memorie recenti venivano rievocate in PF più delle remote ($\chi^2=6.40$, $p=.011$). Vividezza ed emotività erano maggiori per le memorie recenti e si riducevano a t2. Dettagli interni, esterni, temporali ed episodici si riducevano a t2. La PO nelle memorie remote a t1 era associata a un numero maggiore di dettagli semantici. I risultati di questo studio forniscono le prime evidenze dirette sulla relazione tra prospettiva mnestica e navigazionale e offrono la base per future ricerche sugli aspetti fini dell'interazione tra navigazione spaziale e memoria episodica autobiografica. 1Akhtar et al. 2017; 2Committeri et al. 2026; 3Levine et al. 2002; 4Bonavita et al. 2022.

S

293. Time-related alterations in N2/P2 complex following tsDCS, exercise therapy, or combined treatment: A laser-evoked potential investigation among subjects with fibromyalgia

Daniele Saccenti¹, Denise Mellace¹, Angelica De Sandi², Giorgia Boboni², Maurizio Vergari², Eleonora Zirone², Filippo Cogiamanian², Alberto Priori³, Roberta Ferrucci¹

¹ Department of Oncology and Hemato-Oncology, University of Milan, 20122 Milan, Italy

² Department of Neuroscience and Mental Health, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, 20122 Milan, Italy

³ Department of Health Sciences, University of Milan, 20142 Milan, Italy

Poster · Health, sport and wellbeing

The N2/P2 and N1 components of laser-evoked potentials (LEPs) are widely used to assess the functional status of nociceptive neuronal pathways. Nonetheless, only a limited number of studies have examined the modulatory effects of transcutaneous spinal direct current stimulation (tsDCS) and exercise therapy (ET) on these neurophysiological markers in subjects with chronic pain syndromes such as fibromyalgia. The aim of this work was, therefore, to test the effects of a multimodal treatment approach on LEPs' N2/P2 and N1 responses. Of the 62 patients with fibromyalgia screened, 45 were enrolled and randomly assigned to the tsDCS, ET, or

combined tsDCS + ET group for a three-week treatment period. LEPs, including the N2/P2 and N1 components, were recorded alongside the Visual Analogue Scale (VAS) for the assessment of subjective pain intensity at baseline, one week after treatment initiation, at the end of treatment, and at 3-month follow-up. Wald chi-squared tests applied to either linear or generalized linear mixed-effects models revealed a significant main effect of Time on N2/P2 amplitude ($p < 0.001$). Consistently, a significant main effect of Time was observed on N2/P2 habituation ($p = 0.019$). Trends toward statistical significance were observed for the main effect of Time on N1 amplitude ($p = 0.067$) and for the association between VAS score and N1 amplitude ($p = 0.055$). No significant effects were detected for the nociceptive threshold, or latency of N1 and N2. These findings suggest that, irrespective of group-specific differences, the interventions modulated pain-related physiological processing, resulting in reduced nociceptive responsiveness.

294. Socio-cognitive polarization as a framework for understanding cognitive rigidity and its impact on extreme judgments and choices

Carola Salvi¹, Paola Iannello¹, Elia Amighetti¹, Alessandro Antonietti¹, Alice Cancer¹

¹ Università Cattolica del Sacro Cuore, Milan, Italy

Intervento in simposio · Social cognition

Socio-Cognitive Polarization (SCP) is a psychological construct capturing a general disposition toward rigid thinking across cognitive, social, and ideological domains. Conceptually, SCP integrates absolutistic cognitive style, ideological rigidity, and xenophobic attitudes, reflecting a broader tendency toward inflexible information processing and polarized worldviews. Across a series of studies, we found that SCP is a unifying predictor encompassing cognitive performance, metacognitive evaluation, and belief formation. Using both content-neutral problem-solving paradigms and socio-political measures, we found that SCP is systematically associated with reduced cognitive flexibility and impaired epistemic evaluation. Empirical findings revealed that SCP is positively related to believing in fake news, greater overconfidence, metacognitive inaccuracies (particularly in discriminating valid from invalid problem solutions), anti-vaccination attitudes and conspiratorial thinking, while it is negatively related to problem-solving performance. Further, cognitive flexibility and overconfidence emerged as key predictors of SCP, while fluid intelligence accounted for the relationships among its components clarifying its underlying structure. Together, these findings established SCP as a stable cognitive-ideological disposition that biases belief evaluation, amplifies susceptibility to conspiracy-related narratives, and contains adaptive belief updating and decision making.

295. Individual Differences in Reward Salience Attribution: Replicable Neural Phenotypes and Their Dopaminergic Basis

Nicola Sambuco¹, Antonella Lupo¹, Peter C.T. Hawkins², Pierluigi Selvaggi¹, Linda A. Antonucci¹, Alessandro Bertolino¹, Antonio Rampino¹, Mitul A. Mehta², Giulio Pergola¹

¹ University of Bari

² King's College London

Intervento in simposio · Emotions and motivation

Individual differences in reward motivation are central to understanding psychiatric vulnerability. The Sign-Tracker/Goal-Tracker (ST/GT) distinction differentiates

individuals who attribute motivational salience to reward-predictive cues (ST) from those who remain oriented toward reward outcomes (GT). Whether this distinction maps reliably onto human neural phenotypes and what mechanisms underlie it is unclear. We analyzed task-based fMRI data from 1,169 healthy participants across three cohorts: a Discovery sample (n=890), an independent Replication sample (n=245), and a placebo-controlled Pharmacological Challenge cohort (n=34). All participants completed variants of the Monetary Incentive Delay task, isolating anticipatory and outcome-related reward signals. Hierarchical clustering of BOLD responses from reward-related regions identified ST-like and GT-like profiles with robust cross-site replicability exceeding 78.7% across cohorts. ST individuals exhibited dominant ventral striatal activation during reward anticipation, whereas GT individuals showed greater reactivity at outcome. At the neuropsychological level, ST showed heightened reward sensitivity in a passive avoidance paradigm and superior executive functioning relative to GT (both $pFDR < 0.05$). In the pharmacological cohort, D2 receptor antagonism selectively attenuated anticipatory ventral striatal activity in ST in a dose-dependent manner (risperidone linear trend: $p = 0.009$), accompanied by reduced self-reported energy ($p < 0.001$), while GT remained unaffected neurally ($p = 0.334$) and subjectively ($p = 0.997$). These findings establish a replicable, dopamine-sensitive framework of individual variation in reward processing, with implications for personalized approaches in conditions involving dysregulated motivation.

296. Sign-Tracking and Goal-Tracking: A Multilevel Framework for Reward, Motivation, and Psychiatric Vulnerability

Nicola Sambuco¹, Sara Garofalo²

¹ University of Bari

² University of Bologna

Simposio · Emotions and motivation

This symposium examines individual differences in the attribution of incentive salience to reward-predictive cues, focusing on the sign-tracking (ST) and goal-tracking (GT) continuum as a unifying framework across behavioral, neurobiological, and clinical domains. The presented studies integrate behavioral, computational, neuroimaging, and translational approaches to elucidate how these phenotypes shape motivated behavior and its disruption. First, at the preclinical level, sign-tracking emerges as a potential transdiagnostic endophenotype linking reward and fear systems, with findings highlighting marked circuit-level heterogeneity within thalamic pathways, suggesting that similar behaviors can arise from distinct neural mechanisms. Building on this, evidence shows that ST individuals are more susceptible to Pavlovian biases that promote suboptimal decisions, driven by slower updating of cue values rather than their overvaluation. Complementing these findings, large-scale neuroimaging data demonstrate that the ST/GT distinction maps onto replicable human neural phenotypes, characterized by differential striatal activation during reward anticipation versus outcome, and selectively modulated by dopaminergic signaling. Finally, the translational relevance of this framework is underscored in clinical research on tobacco use disorder, where ST- and GT-like neuroaffective profiles predict differential treatment responses, supporting the use of personalized pharmacotherapy strategies. Overall, this symposium advances sign-tracking as a translationally productive dimension of individual variability, bridging

mechanistic and clinical levels of analysis.

297. When pictures predict real rewards: Striatal wanting signals are driven by contingency, not content

Nicola Sambuco¹, Versace Francesco²

¹ University of Bari

² University of Texas MD Anderson Cancer Center,

Mini-talk · Emotions and motivation

Free viewing of emotional pictures activates motivational circuits in proportion to arousal and valence, but without real outcome delivery, anticipatory wanting cannot be separated from consummatory valuation. Gustatory neuroimaging paradigms deliver actual rewards but rely on impoverished, affectively neutral cues that do not engage natural selective attention. We combined these approaches in a single fMRI session, presenting emotional images (erotica, mutilations, neutral scenes) alongside food photographs, drawn from the same pool, that either predicted juice delivery (Food+) or did not (Food-). On every Food+ trial, participants (N = 23) indicated whether they wanted the juice, enabling a within-subject dissociation of anticipatory from consummatory signals. Nucleus accumbens responded selectively to Food+ cues, exceeding activation to both erotica and mutilation images, indicating that mesolimbic engagement was driven by outcome prediction rather than emotional arousal, valence, or visual content. A temporal dissociation revealed that the nucleus accumbens carried the dominant anticipatory signal during the cue period, while the ventromedial prefrontal cortex carried the dominant outcome-period signal at juice delivery, consistent with the wanting and liking distinction. Representational similarity analysis across a set of regions of interest confirmed that outcome prediction, not arousal, valence, or visual category, was the dominant organizing principle of the multivariate neural response. These findings show that whether a visual stimulus engages reward circuitry depends less on what it depicts than on what it predicts and offer a framework for studying individual differences in appetitive motivation and cue-induced eating.

298. Correlations between chemosensory function and cognitive abilities in healthy subjects and Parkinson's disease patients

Fabrizio Sanna¹, Ilenia Pinna¹, Rafaela Mostallino¹, Francesco Loy¹, Paolo Solla², Carla Masala¹

¹ Università di Cagliari, Dipartimento di Scienze Biomediche

² Università di Sassari, Unità di Neurologia

Poster · Attention, perception and consciousness

Alterations in chemosensory function (i.e., olfactory and gustatory) have been consistently associated with deficits in cognitive domains in the elderly and in clinical populations. The present study aimed to investigate associations between chemosensory and cognitive deficits in male and female subjects with Parkinson's disease (PD) and potential differences towards a matched sample of healthy controls. Chemosensory function was assessed by the Sniffin' Stick test and the Taste Strips test, while evaluation of cognitive functions was performed by the Montreal Cognitive Assessment (MoCA) in healthy (n = 152, M = 64, age range: 41-92) and PD subjects (n = 134, M = 53, age range: 42-86). Regardless of sex, PD subjects displayed lower scores compared to controls in almost all the variables investigated, with the exclusion of the attention score of the MoCA. Several significant differences were also

detected between males and females in olfactory and gustatory parameters, both in PD and healthy subjects. A significant Sex*Parkinson's disease interaction was detected by two-way ANOVA in the Olfactory Threshold. Significant effects were also observed by Age as a covariate on almost all the parameters investigated (except for Sweet and Sour). Finally, significant correlations were detected between chemosensory and cognitive functions both in healthy and PD subjects, although with significant differences between these two populations. Overall, our results highlight the importance of investigating the interactions between chemosensory and cognitive functions in healthy people and clinical populations for the development of personalized risk prevention strategies towards neurodegenerative disorders.

299. Potential role of oxytocin in the prevention of alcohol relapse: role of the Bed Nucleus of the Stria Terminalis (BNST)

Fabrizio Sanna¹, Maria Paola Castelli¹, Giancarlo Colombo², Grazia Contena¹, Paola Maccioni², Rafaela Mostallino¹

¹ Università di Cagliari, Dipartimento di Scienze Biomediche

² Centro Nazionale delle Ricerche, Istituto di Neuroscienze

Intervento in simposio · Emotions and motivation

Recently, an involvement for the neuropeptide oxytocin in addictions, including alcohol use disorder (AUD) has been suggested, also raising the possibility of its use as a therapeutic agent. In this regard, a role for the BNST, a key structure for the regulation of anxiety and stress, has been hypothesized. However, the role of oxytocin in this brain area for the treatment of AUD is almost completely unknown. To this aim, we exposed Sardinian alcohol-preferring (sP) rats - a validated model of AUD - and Wistar rats as a control, to a 2-bottle "alcohol vs water" choice regimen and, after a 14-day period of alcohol deprivation, to a final drinking session, promoting relapse-like drinking. Intermittent alcohol exposure produced an escalating alcohol intake in Wistar and sP rats (2-3 and 8-10 g/kg/day). Limited access induced binge-like alcohol drinking in Wistar and sP rats (1.0-1.5 and 2.0-2.5 g/kg). Abstinence triggered a significant increase in alcohol intake once rats were re-exposed. Oxytocin, given systemically (0.5 mg/kg ip) for seven days before the relapse session, was able to partially prevent the binge intoxication in sP (by about 50%) but not Wistar rats. This effect was observed concomitantly with modifications of the neurochemical activity in the BNST. These results can be relevant for the development of preclinical models of AUD and effective treatments. The specificity of preventive effects on sP relapse by oxytocin leads to hypothesize that this action can be related to selective neurochemical alterations in genetically predisposed subjects more than in the general population.

300. The Misinformation Susceptibility Test (MIST-ita): A measure of misinformation susceptibility and discernment in the Italian context

Alessandro Santirocchi¹, Matteo Cinelli², Pietro Spataro³, Roberto Atzeni⁴, Walter Quattrociochi², Clelia Rossi-Arnaud⁴, Vincenzo Cestari⁴

¹ Sapienza University, Department of Psychology

² Department of Computer Science, Sapienza University of Rome

³ Department of Human and Social Sciences University of the System of the Italian Chambers of Commerce, Universitas Mercatorum

⁴ Department of Psychology, Sapienza University

Intervento in simposio · Social cognition

Interest in the psychology of misinformation has grown rapidly in recent years. However, only a limited number of validated frameworks are available to capture the multifaceted nature of misinformation susceptibility. Among these, the Verification done framework (Maertens et al., 2024) provides a comprehensive account, conceptualizing susceptibility as the interplay between veracity discernment abilities (i.e., real and fake news detection) and systematic judgment biases (distrust and naïveté), and has been operationalized through the development of the Misinformation Susceptibility Test (MIST). Building on this work, the present study introduces and validates the Italian adaptation of the MIST (called MIST-ita), also extending the original framework by incorporating an assessment of confidence in participants' judgments. A large pool of items was developed by combining real statements with fabricated content generated through large language models and curated by experts to ensure ecological validity. In an initial study (N = 300), network psychometric methods were used to explore the dimensional structure of the item pool, resulting in a preliminary two-factor solution (real vs. fake) and the selection of an 8-item version of the scale. Ongoing data collection aims to confirm the structure and evaluate the reliability and validity of the instrument in a larger sample. Overall, the MIST-ita represents the first instrument in the Italian context to provide a robust and validated measure of misinformation susceptibility, moving beyond binary judgments through the inclusion of confidence-based responses. This approach allows for a better understanding of how individuals evaluate complex information and provides a reliable index of susceptibility.

301. Integrating Classical Test Theory and Item Response Theory: An analysis with the Hooked on Nicotine Checklist

Sofia Santisi¹, Giulia Fioravanti², Chiara Lombardi³, Caterina Primi³, Maria Anna Donati³

¹ Università degli Studi di Firenze, Dipartimento di Statistica, Informatica, Applicazioni 'Giuseppe Parenti'

² Università degli Studi di Firenze, Dipartimento di Scienze della Salute (DSS)

³ Università degli Studi di Firenze, Dipartimento di Neuroscienze, Psicologia, Area del Farmaco e Salute del Bambino (NEUROFARBA)

Mini-talk · Methodology

The integration of Classical Test Theory (CTT) and Item Response Theory (IRT) represents a growing focus in psychometric research, driven by the need to reconcile the interpretability and widespread use of classical approaches with the precision and flexibility of modern latent trait modeling. Rather than being treated as competing paradigms, CTT and IRT can be combined in a complementary manner: CTT provides global indices of reliability and structural adequacy, while IRT enables a fine-grained, item-level analysis of measurement precision across the latent trait continuum. Within this integrative framework, we used the Hooked on Nicotine Checklist (HONC) – a widely used unidimensional instrument to measure loss of autonomy over nicotine use in adolescents through a dichotomous response format - as a practical case example. CTT-based analyses were first employed to assess overall scale structure and internal consistency, offering a conventional reliability benchmark. In parallel, IRT modeling is applied to estimate item parameters and evaluate measurement precision across different levels of nicotine dependence, revealing how individual items function along the latent continuum. Overall, this study illustrates how the convergence of CTT and IRT, by drawing on the strengths of

both approaches, can strengthen measurement practices, improving the validity, reliability, and clinical usability of the HONC in both research and applied assessment settings.

302. When Sensory Context Matters: Individual Differences in Sensory Processing Modulate Working Memory Performance

Alessia Santostefano¹, Vincenza Tarantino², Patrizia Turriziani², Massimiliano Oliveri³

¹ International School of Advanced Studies, University of Camerino, Camerino, Italy

² Department of Psychology, Educational Sciences and Human Movement, University of Palermo, Palermo, Italy

³ Centre for Neurology and Rehabilitation (CERENEO)

Poster · Attention, perception and consciousness

Individual differences in sensory sensitivity and habituation may influence cognitive performance, particularly in individuals with higher autistic traits. The present study investigated how sensory stimulation modulates working memory performance and whether individual differences in sensory processing are associated with task outcomes. Participants completed two 2-back tasks, each divided into three blocks with different sensory conditions. In the auditory-verbal task, participants responded to syllables while background screen color varied (black, gray, magenta). In the visuospatial task, participants monitored matrix patterns while exposed to different auditory conditions (no noise, white noise, brown noise). Sensory habituation and sensitivity were assessed using the SHABQ, and autistic traits were measured with the AQ. Preliminary results showed that in the visuospatial task, performance improved in the presence of auditory stimulation, suggesting an arousal-related facilitation effect. However, no significant differences emerged between white and brown noise conditions. In contrast, the auditory-verbal task revealed a significant performance difference between black and magenta conditions, with higher accuracy in the magenta condition. Importantly, the performance difference between black and magenta conditions was significantly correlated with both SHABQ and AQ scores. This suggests that individuals' sensory processing profiles and autistic traits are associated with the degree to which sensory context modulates cognitive performance. Overall, these findings highlight the role of sensory sensitivity and habituation in shaping working memory performance and suggest that task-irrelevant sensory input may differentially impact cognition depending on individual sensory traits.

303. Nostalgia e cambiamento: Uno studio sperimentale sul ruolo della nostalgia nel viaggio trasformativo

Eleonora Diletta Sarcinella¹, Anna Forzato¹, Alice Chirico¹

¹ Università Cattolica del Sacro Cuore di Milano

Intervento in simposio · Methodology

La nostalgia è un'emozione complessa che, attraverso diverse traiettorie temporali, contribuisce alla continuità del sé e all'attribuzione di significato alla vita. Sebbene sia stata ampiamente studiata come risposta a minacce esterne, perdite o transizioni critiche, il suo ruolo nelle esperienze di cambiamento positivo, come i viaggi trasformativi, rimane ancora poco indagato. Il presente studio intende esplorare la relazione tra predisposizione nostalgica, nostalgia di stato orientata al passato e al futuro, e impatto trasformativo percepito dopo un'esperienza di viaggio. Lo studio adotta un

disegno quantitativo ed esplorativo. Hanno partecipato 165 adulti italiani, selezionati mediante domande di screening relative all'aver vissuto almeno un viaggio potenzialmente trasformativo, come missioni, volontariato, o viaggi spirituali e culturali. La raccolta dati è avvenuta online. La batteria self-report ha incluso misure volte a valutare processi ed esiti trasformativi, nostalgia disposizionale orientata al passato e al futuro, item ad hoc per la nostalgia di stato riferita al viaggio, regolazione emotiva, con particolare riferimento al cognitive reappraisal come moderatore, e tratti di personalità, con attenzione all'apertura all'esperienza. Le relazioni tra le variabili sono state esaminate mediante path analysis, indagando il ruolo della nostalgia di tratto come predittore della nostalgia di stato, l'associazione tra nostalgia di stato e intensità trasformativa percepita, il contributo dell'apertura all'esperienza e l'effetto moderatore. I risultati contribuiscono sia a una maggiore comprensione dei processi psicologici implicati nelle esperienze trasformative, sia allo studio della nostalgia come emozione temporalmente dinamica, capace di collegare passato, presente e futuro nei percorsi di cambiamento personale.

304. Take Care of Yourself: Development and application of a program to enhance well-being in upper secondary school students

Laura Francesca Scalas¹, Maria Luisa Pedditzi¹, Stefania Cuccu¹, Daniela Fadda¹

¹ Università degli Studi di Cagliari

Mini-talk · Health, sport and wellbeing

Introduction Intervention development is an iterative and complex process, moving from basic research to real-world implementation. Evaluating the efficacy of such programs - particularly in school settings - presents significant challenges. Methodological rigor may be enhanced by aligning the theoretical framework used for intervention development with the instruments selected for its evaluation. This study is part of a PRIN PNRR Project and evaluates "Take Care of Yourself," a multidimensional program designed to enhance students' well-being. A key feature of the program is its internal consistency, utilizing the "Well-being Profile" as both the developmental blueprint and the primary measurement tool. Method The research involved 12 final-year classes from urban upper secondary schools in Sardinia, Italy. Using a quasi-experimental, non-randomized design, the study included a pilot phase (intervention, N = 15; control, N = 15) and a main intervention phase (Intervention N = 88; Control N = 80). At the pre-test, post-test and follow-up all students completed a survey on well-being. The Take Care of Yourself program was administered to the intervention classes in six 1-hour sessions from January 2025 to April 2025. Results The results revealed protective trends across some well-being dimensions (for example optimism and meaning). Small but sustained improvements were observed at the follow-up stage, suggesting that the proposed activities might have strengthened students' ability to maintain a positive psychological state. Conclusions While the findings require further validation through larger and more diverse student samples, these preliminary results are promising, highlighting the potential of theoretically aligned school interventions to foster psychological well-being.

305. Invecchiamento e pressione temporale nella decisione lessicale: Costi dell'errore e controllo delle risposte motorie

Michele Scaltritti¹, Saman Kamari Songhorabadi¹, Simone Sulpizio²

¹ Università degli Studi di Trento, Dipartimento di Psicologia e Scienze Cognitive

² Università degli Studi di Milano-Bicocca, Dipartimento di Psicologia

Mini-talk · Life cycle (e.g., development and aging)

Il rallentamento legato all'età nei compiti di scelta binaria è tradizionalmente interpretato come conseguenza del declino cognitivo o come spostamento strategico verso criteri di prestazione conservativi. Il presente studio ha indagato tale fenomeno su un campione di 40 anziani (> 65 anni) e 42 giovani adulti (< 30 anni), combinando un compito di decisione lessicale con una manipolazione del compromesso velocità-accuratezza (speed-accuracy tradeoff) e registrazioni elettromiografiche (EMG). Oltre al classico rallentamento globale, la prestazione degli anziani è risultata caratterizzata da una marcata resistenza alla pressione temporale. Anche se istruiti a privilegiare la velocità, i partecipanti anziani hanno mantenuto criteri operativi cautelativi, minimizzando l'errore a discapito della rapidità. Tale avversione agli errori si accompagna ad aggiustamenti post-errore disadattivi, caratterizzati da un marcato rallentamento nonostante una riduzione dell'accuratezza e a maggiori costi temporali per la correzione delle attivazioni muscolari sottosoglia (errori parziali). In assenza di pressione temporale, inoltre, i partecipanti anziani hanno mostrato un numero di errori parziali comparabile a quello dei giovani adulti, nonostante tempi di risposta significativamente più lenti. Questi risultati suggeriscono che la resistenza alla pressione temporale e l'avversione agli errori riflettano adattamenti funzionali a un duplice vincolo: una transizione più rumorosa nel passaggio da decisione a risposte motorie e costi elevati per il recupero di errori sia latenti che manifesti. In quest'ottica, il rallentamento nei tempi di risposta rappresenterebbe, insieme ad altri aspetti, anche una strategia compensativa a fronte di una ridotta efficienza nell'elaborazione degli errori e nell'implementazione di risposte motorie.

306. Improving cut-off determination of Neuropsychological tests: a Bayesian approach

Michele Scandola¹, Giorgio Arcara², Alessio Toraldo³,

¹ Dipartimento di Scienze Umane, Università di Verona

² Università di Padova, Dipartimento di Psicologia Generale & IRCCS San Camillo Venezia

³ Università di Pavia, Dipartimento di Scienze del Sistema Nervoso e del Comportamento & NeuroMI

Mini-talk · Methodology

Traditional validation in neuropsychology typically relies on normative data from healthy individuals to define cut-off scores. While this approach estimates specificity, it provides limited information on sensitivity and yields generic, non-pathology-specific thresholds. Receiver Operating Characteristic (ROC) analysis could address this limitation, but its application is often constrained by the difficulty of collecting sufficiently large clinical samples. To overcome this issue, we propose a Bayesian ROC framework, which naturally incorporates uncertainty related to small sample sizes and allows more robust inference. We implemented a Bayesian model to estimate ROC curves, optimal cut-offs, sensitivity,

specificity, and Area Under the Curve (AUC), assuming test scores follow Student's t-distributions to account for increased variability in small samples. The model was tested using data from 396 healthy participants and 208 individuals with Alzheimer's dementia[1]. Across 100 iterations, we compared Bayesian ROC and bootstrapped ROC using the full healthy sample and random subsamples of 20 patients. Bayesian ROC consistently showed slightly higher AUC (Median = 0.97, 95% CI: 0.94–0.99) compared to bootstrapping (Median = 0.96, 95% CI: 0.90–0.99), along with comparable or improved sensitivity and specificity and narrower confidence intervals for optimal cut-offs. Model diagnostics indicated good convergence and fit. These findings suggest that Bayesian ROC provides more stable and precise estimates of diagnostic accuracy, particularly with limited patient data. By explicitly modeling uncertainty and enabling the integration of prior knowledge, this approach supports cumulative refinement of cut-offs and offers a robust alternative to traditional frequentist methods in neuropsychological assessment.

307. When Gender Shapes Diagnosis: Investigating Bias in Autism Spectrum Disorder Assessment

Michele Scandola¹, Anna Perbellini², Lucrezia Vittoria Raneri², Giovanna Tenci², Fabio Corsi²

¹ Università di Verona, Dipartimento di Scienze Umane

² Dipartimento di Scienze Umane, Università di Verona

Mini-talk · PANEL (no track)

Autism spectrum disorder (ASD) has received increasing attention due to its clinical complexity and broader social and diagnostic implications. Alongside rising prevalence, concerns have emerged regarding gender differences in its presentation. Evidence suggests that ASD may manifest more subtly in females, often masked by compensatory strategies such as camouflaging, which can delay or hinder accurate diagnosis. Reports from many women describing late or missed diagnoses raise the possibility of gender bias in clinical assessment, where social expectations (e.g., greater empathy or sociability in females) may lead clinicians to underestimate ASD symptoms. This study investigates potential gender bias in ASD diagnosis through an experimental survey involving approximately 30 clinicians engaged in diagnostic practice. Using vignette-based methodology, participants evaluated cases in which ASD presence was balanced across male and female profiles. The study was pre-registered on OSF. Data were analysed using Bayesian Generalised Linear Models to compare three competing hypotheses: no gender bias, an epidemiologically informed bias (m/f 4:1 ratio), and an extreme bias (m/f 10:1 ratio). Results indicate that the epidemiologically informed bias model best explains clinicians' responses, supporting the presence of gender bias in diagnostic judgments. This bias was not significantly influenced by professional experience or metacognitive awareness. These findings highlight the need to address implicit biases in ASD assessment. Increasing awareness of gender-related diagnostic challenges may improve accuracy and equity, particularly for females whose symptoms are more likely to be overlooked or misinterpreted.

308. Psychosocial factors and electrophysiological biomarkers: an integrated model of cognitive health in older adults

Giorgia Francesca Scaramuzzi¹, Valerio Manippa², Sabrina Iacobellis³, Laura Lonigro³, Ester Cornacchia¹, Daphne Gasparre¹, Paolo Taurisano¹

¹ Università degli Studi di Bari Aldo Moro, Dipartimento di Biomedicina Traslationale e Neuroscienze DiBrain

² Università degli Studi eCampus, Dipartimento di Scienze Teoriche e Applicate (DiSTA)

³ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia e Comunicazione For.Psi.Com

Mini-talk · Life cycle (e.g., development and aging)

Cognitive Reserve (CR) and social isolation are critical modifiable factors for cognitive health, but their underlying neurophysiological mechanisms remain poorly understood. This study investigates how CR, social connectedness, and resting-state EEG markers relate to cognitive functioning and neural efficiency. One hundred sixty-eight older adults underwent comprehensive neuropsychological assessment. Linear and logistic regressions tested associations between cognitive performance, CR, and social connectedness. Higher CR and larger social networks were robustly associated with better cognitive performance across multiple cognitive domains. Logistic regression confirmed that occupational complexity, leisure engagement, and larger social networks significantly predicted healthy cognitive status. Subsequently, a sub-sample of cognitively healthy and impaired older adults, balanced for sociodemographic features, underwent resting-state EEG recording. Spectral power analysis showed that, across all frequency bands examined, cognitively impaired individuals differed from controls only in high-gamma power (51-80Hz), which was significantly higher in the impaired group. Given its role as a marker of cortical excitability, high-gamma power was subsequently added to the lifestyle predictors in the regression model, using Global Cognition index as the dependent variable. This integrative model revealed that global cognition was positively predicted by psychoaffective factors and negatively predicted by high-gamma power. These findings confirm the protective role of CR and social engagement. Furthermore, gamma activity emerges as a biomarker of cognitive decline, potentially reflecting the disrupted neural activity or cortical instability characterizing neurodegeneration. The results suggest that integrated protocols comprising cognitive, neural, and social stimulation may preserve cognitive health by maintaining optimal neuropsychological efficiency in older adulthood.

309. Lifespan-modulated hierarchy of conceptual accessibility in the domain of technology

Elisa Scerrati¹, Ilenia Falcinelli², Claudia Repetto³, Anna Maria Borghi²

¹ Università Telematica Pegaso, Dipartimento di Psicologia e Scienze della Salute

² Sapienza Università di Roma, Dipartimento di Psicologia Dinamica, Clinica e Salute

³ Università Cattolica del Sacro Cuore, Dipartimento di Psicologia

Mini-talk · Language, reading and music

How do individuals mentally organize technology-related knowledge, and does this vary across the lifespan? We addressed these questions using a free-listing paradigm followed by three cued production tasks (in which participants were explicitly asked to list technological objects, technological abstract concepts, and interactive applications administered to 40 participants across four age groups: younger adults (18–24),

adults (25–40), late adults (41–64), and older adults (>65). Younger adults showed higher technology familiarity than older adults, and produced a greater variety of concepts. Poisson modeling revealed that more items were generated in the object task across all age groups, a pattern driven primarily by older adults; conversely, younger adults produced more words in the abstract and interactive task as familiarity increased. Regardless of age, correlational analyses showed that object concepts produced frequently in the cued task were also produced frequently and earlier during spontaneous listing, pointing to their privileged cognitive accessibility. Furthermore, cross-task overlap analyses revealed that concepts produced in the interactive task (e.g., “chatGPT”) showed the largest overlap with those produced in both the object and abstract tasks, pointing to their potential bridging role between the concrete and abstract dimensions of technology. Interestingly, the minimal overlap between object and abstract categories was restricted to internal hardware components (e.g., “chip”), suggesting that abstractness in the context of technology may partly reflect limited familiarity with and experiential access to domain-specific concepts. Together, these findings extend grounded cognition frameworks by revealing a lifespan-modulated hierarchy of conceptual accessibility in the domain of technology.

310. Protocol-dependent effects of 40 Hz gamma stimulation on associative memory

Gaetano Scianatico¹, Ilenia Gemitì², Giorgia Francesca Scaramuzzi³, Davide Rivolta¹, Valerio Manippa⁴

¹ University of Bari Aldo Moro, Department of Education, Psychology and Communication

² University of Ferrara, Department of Neuroscience and Rehabilitation

³ University of Bari Aldo Moro, Department of Translational Biomedicine and Neurosciences

⁴ eCampus University, Department of Theoretical and Applied Sciences

Poster · Memory

Gamma oscillations are implicated in associative memory and are increasingly targeted by non-invasive brain stimulation protocols. However, their effects on memory remain heterogeneous and may depend on stimulation timing and modality. This study compared the effects of 40 Hz transcranial alternating current stimulation (tACS) and rhythmic auditory stimulation (rAS) during a face-name associative memory task (ItFNAT; Manippa et al., 2025). One hundred twenty healthy adults were assigned to one of four 40 Hz stimulation groups: face-network tACS (Fp1-PO8), temporal tACS (T7-T8), sinusoidal rAS, and square-wave rAS. Each participant completed three stimulation conditions: continuous stimulation administered throughout the entire task (Continuous), phase-specific stimulation administered only during encoding and recall phases (E-R), and sham stimulation (Sham). Memory performance was analyzed using linear and generalized mixed-effects models. No significant omnibus effects emerged. Exploratory analyses revealed selective effects: continuous 40 Hz tACS improved delayed total recall relative to sham in the Fp1-PO8 group ($p = .028$), whereas square-wave auditory stimulation showed timing-dependent effects, with better performance in the continuous condition relative to phase-specific stimulation ($p = .027$). Effect sizes were small, suggesting limited generalizability across stimulation protocols. These findings suggest that the cognitive effects of gamma stimulation are highly dependent on target site, timing, and modality, delineating the boundary conditions of cognitive entrainment protocols.

311. Working Memory, Cognitive Inhibition, and Psychological Well-Being in Older Age: Their Impact on Essentialist and Nonessentialist Views of Cognitive Aging

Enrico Sella¹, Elena Carbone¹, Riccardo Domenicucci¹, Diletta Signori¹, Giorgio Arcaraz, Erika Borella¹

¹ Department of General Psychology, University of Padova, Italy

² Department of General Psychology, University of Padova, Italy; IRCCS San Camillo Hospital, Venice, Italy

Mini-talk · Memory

Views of cognitive aging (VoCA) include beliefs referring to the fixedness of cognitive aging -essentialist views- and to its malleability -nonessentialist views. This cross-sectional study examined whether and how working memory (WM), inhibition/interference tasks, and psychological well-being (PWB) are associated with essentialist and nonessentialist VoCA among older adults. A sample of 225 older adults aged 64-85 years completed a new questionnaire –the VoCA-q– assessing generalized and personal essentialist and nonessentialist VoCA. Participants also completed the Listening Span Test to assess WM and proactive interference (PI; intrusion errors), the Hayling Sentence Completion Task to assess controlled inhibition, and a PWB questionnaire. Regression analyses showed that cognitive functioning and PWB explained significant, albeit modest, variance in both generalized and personal nonessentialist VoCA, but not in essentialist VoCA dimensions. In particular, WM was positively associated with both nonessentialist VoCA dimensions. Greater resistance to PI and higher PWB were also positively associated only with generalized nonessentialist VoCA. The roles of WM and PWB in both personal and generalized nonessentialist VoCA dimensions, and of PI in generalized nonessentialist VoCA, were also confirmed only among older adults aged 75-85 years, but not among younger ones (64-74 years). These results suggest that cognitive resources, particularly WM and PI, and PWB contribute differently to views of age-related cognitive changes, depending on the VoCA dimensions, and appear to be particularly relevant in adults over 75. Examining VoCA could be part of cognitive and well-being assessment protocols to promote healthy aging.

312. L'autorivelazione dello psicoterapeuta: validazione preliminare di una nuova misura

Maria Rita Sergi¹, Michela Balsamo², Giorgia D'ignazio², Michela Terreiz, Lucia Del Signore², Andrea Cappabianca³

¹ Dipartimento di Psicologia e Scienze della Salute, Università Telematica Pegaso, Napoli

² Dipartimento di Psicologia, Università G. d'Annunzio, Chieti

³ UOC Psicologia Clinica ASL Napoli1

Poster · Methodology

Introduzione. La self disclosure del terapeuta (TSD) rappresenta una pratica diffusa e clinicamente rilevante, ma la sua valutazione rimane complessa a causa dell'eterogeneità delle definizioni e della mancanza di strumenti specifici per il setting individuale. Le evidenze mostrano che la TSD può favorire alleanza, insight e apertura del paziente, ma un uso inappropriato può generare confusione, attivazione emotiva e rischi relazionali. Inoltre, non è ancora chiaro in che misura la TSD dipenda da caratteristiche personali del terapeuta o da fattori contestuali e formativi. Il presente studio mira a sviluppare e validare preliminarmente un nuovo strumento per misurare la disposizione del terapeuta alla self disclosure. Metodo. A 243 psicoterapeuti (76,5% donne; M età = 46,41) è

stata somministrata una versione della Group Therapist Orientation Scale (GTOS; Dies, 1973), adattata al setting individuale, selezionando 10 item originali e aggiungendone 2 di nuova formulazione. Sono state condotte analisi descrittive, analisi fattoriale esplorativa (EFA), confermativa (CFA), analisi di affidabilità e correlazioni con i tratti di personalità con HEXACO 60 R. Sono state, inoltre, esaminate le differenze per orientamento teorico ed expertise percepita. Risultati. L'EFA ha identificato una struttura a due fattori ("Esperienziale Emotivo" e "Relazionale"), confermata con buoni indici di adattamento alla CFA e con una buona affidabilità. Le correlazioni con i tratti HEXACO non sono risultate significative. L'ANOVA ha evidenziato differenze tra orientamenti terapeutici, con livelli più elevati di TSD nei terapeuti sistemico relazionali e più bassi nei terapeuti psicodinamici [$F(4, 238) = 5.86, p < .001$]. Conclusioni. La nuova scala rappresenta uno strumento promettente per valutare la disposizione del terapeuta alla self disclosure nel setting terapeutico individuale. I risultati preliminari supportano la validità della struttura bifattoriale e suggeriscono che la TSD sia influenzata più dall'orientamento clinico che dai tratti di personalità. Ulteriori studi sono necessari per approfondire le implicazioni cliniche e formative dell'uso della TSD.

313. Funzionamento uditivo oggettivo e soggettivo e visioni personali sull'invecchiamento nell'anziano residente in struttura: uno studio preliminare

Diletta Signori¹, Enrico Sella¹, Elena Carbone¹, Erika Borella¹

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

Poster · Life cycle (e.g., development and aging)

La perdita uditiva età-relata rappresenta una condizione diffusa nella popolazione anziana residente in struttura con ripercussioni negative sul funzionamento psicosociale. Lo studio ha analizzato la relazione tra il funzionamento uditivo oggettivo e soggettivo e le visioni personali dell'invecchiamento, ossia percezioni e atteggiamenti rispetto al proprio invecchiamento. A 47 residenti anziani (66-95 anni, $M=84.4$; $DS=8.72$) senza sintomatologia depressiva severa e con un funzionamento cognitivo nella norma o con lieve deterioramento cognitivo (Mini-Mental State Examination = 18-30) sono stati somministrati l'Hearing Handicap Inventory for the Elderly-Screening version (HHIE-S), per l'uditivo soggettivo; uno screening audiometrico tonale che misura la soglia uditiva nell'orecchio migliore (PTA), per l'udito oggettivo; i questionari di Atteggiamento verso il proprio invecchiamento (ATO) e Consapevolezza dei cambiamenti correlati all'invecchiamento in termini di guadagni (CCCI-Guadagni) e perdite (CCCI-Perdite), per le visioni personali sull'invecchiamento. I risultati preliminari dei modelli di regressione lineare hanno mostrato come i predittori spieghino il 57% della varianza per la CCCI-Perdite: il genere femminile ($B=3.0, p=0.02$), la sintomatologia depressiva ($B=0.95, p=0.00$) e l'HHIE-S ($B=0.19, p=0.01$) -ma non l'età, il funzionamento cognitivo globale e la PTA- sono emersi come predittori significativi, con l'HHIE-S che contribuisce a spiegare per il 9% la varianza totale del modello. Nessuno dei predittori è risultato significativamente associato alla CCCI-Guadagni, mentre la sintomatologia depressiva è risultata l'unico predittore ($B=-0.66, p=0.00$) significativo dell'ATO ($R^2=0.56, p=0.00$). Il funzionamento uditivo soggettivo, ma non oggettivo, sembra, quindi, contribuire ad influenzare alcune dimensioni delle visioni

personali sull'invecchiamento nell'anziano residente in struttura, impattando in particolare sulla sua percezione delle perdite età-relate.

314. Targeting Early Cognitive Aging in Astronauts: A Research Protocol on Non-invasive Neuromodulation in Extreme Environments

Maria Catena Silvestri¹

¹ Università degli Studi di Messina Dipartimento di Scienze cognitive, Psicologiche, Pedagogiche e degli Studi Culturali

Intervento in simposio · Attention, perception and consciousness

Extreme environments such as long-duration space missions expose individuals to chronic isolation, sensory deprivation, and physiological stressors that may accelerate early cognitive aging and impact affect regulation. Within a clinical framework, these conditions also challenge identity integration and adaptive psychological functioning. The present study investigates the preventive potential of non-invasive neuromodulation in mitigating cognitive and emotional vulnerability in such contexts. An ongoing longitudinal mixed-method protocol involves a reference sample (N = 48) recruited from analog extreme environments (e.g., Antarctic stations, confined habitat simulations). Participants are randomly assigned to an active transcranial direct current stimulation (tDCS) condition or a sham-control group. Stimulation targets the left dorsolateral prefrontal cortex over a 4-week period. Neuropsychological assessment includes the Montreal Cognitive Assessment (MoCA), n-back task, Stroop Test, and Trail Making Test (TMT A/B). Psychological functioning is evaluated the Beck Depression Inventory-II (BDI-II), State-Trait Anxiety Inventory (STAI), and Connor-Davidson Resilience Scale (CD-RISC). A qualitative component explores subjective experiences of isolation, identity reorganization, and affective regulation through thematic analysis of semi-structured interviews. Preliminary results indicate improved executive functioning and reduced affective distress in the active group, alongside enhanced resilience. Neuromodulation appears to support not only cognitive efficiency but also processes of emotional regulation and adaptive integration under extreme conditions. These findings suggest that neuromodulation may represent a promising preventive tool in space psychology, with broader implications for clinical populations exposed to chronic stress and environmental deprivation.

315. To Show or to Tell: How Avatar Modeling and Verbal Instructions Shape Subsequent Ecological Behavior in Immersive Virtual Reality

Angelo Lucio Silvino¹, Tina Iachini¹, Gennaro Ruggiero¹, Francesco Ruotolo¹

¹ Laboratory of Cognitive Science and Immersive Virtual Reality (CS-IVR), Department of Psychology, University of Campania Luigi Vanvitelli

Mini-talk · Memory

Immersive virtual reality (IVR) is increasingly used to promote pro-environmental behavior, but the underlying learning mechanisms remain unclear. The literature has not clarified whether ecological action patterns are more effectively carried over into subsequent behavior when acquired through observing a virtual model or following verbal instructions. To address this, two studies were conducted in an immersive virtual kitchen. In Study 1, participants observed an avatar performing ecological or non-ecological household actions. In Study 2, they performed the same actions following verbal

instructions. In both studies, participants were then left free to interact with the environment to assess spontaneous behavior. Self-efficacy was measured before and after the experimental session. Participants also completed an object-location memory task as a cover task and, at the end of the session, a covert resource-saving task measuring the number of paper napkins used to dry a water spill. In both studies, participants in the ecological conditions followed the previously presented ecological action pattern more closely than the non-ecological group. However, only Study 1 showed broader effects beyond immediate action carry-over: participants exposed to the ecological avatar used fewer paper napkins and reported higher post-experimental self-efficacy than the non-ecological group. In the same study, the ecological condition was also associated with lower object-location memory performance. These findings suggest that ecological action patterns are reproduced more readily than non-ecological ones and that avatar-based modeling may produce broader immediate effects than verbal instruction. From an applied perspective, IVR avatars may represent a useful tool for promoting immediate resource-saving behavior.

316. Emozioni in tre dimensioni: validazione di ologrammi 3D dinamici come stimoli affettivi

Gloria Simoncini¹, Francesca Borghesi², Pietro Cipresso²

¹ Università degli Studi eCampus, Dipartimento di Scienze Teoriche e Applicate

² Università di Torino, Dipartimento di Psicologia

Intervento in simposio · Methodology

Comprendere le emozioni nella loro natura dinamica e contestuale richiede stimoli in grado di restituire la complessità delle esperienze affettive reali. Gli ologrammi 3D dinamici, realizzati tramite tecnologia di video volumetrico, rappresentano una frontiera promettente in questo senso: immersivi, spazialmente ricchi e temporalmente articolati, aprono nuove possibilità per l'integrazione in paradigmi di assessment, stimolazione e riabilitazione di processi cognitivo-emotivi. Il presente contributo illustra la struttura e le evidenze iniziali di validazione di un insieme di 128 stimoli in lingua italiana, sviluppati considerando variabili sistematicamente manipolate nella letteratura: prospettiva (prima vs terza persona), contesto sociale (formale vs informale), caratteristiche ambientali e contenuto emotivo classificato secondo il Modello Circomplesso dell'Affetto. Questa architettura consente di esplorare in modo controllato processi quali la consapevolezza emotiva, la flessibilità cognitiva e la teoria della mente. I risultati vengono discussi in termini di applicabilità degli ologrammi come strumenti innovativi per la ricerca e la pratica clinica, anche in popolazioni con vulnerabilità o disturbi cognitivo-emotivi.

317. Development and Validation of the Empathy for Plants and Trees Inventory (EPTI)

Chiara Luisa Sirca¹, Umberto Granziol¹, Alessandro Angrilli¹

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

Mini-talk · Methodology

Empathy is a complex construct expressed toward different living targets. While empathy toward humans and animals has been widely investigated, empathy toward nature, specifically, plants and trees, has received less attention. Notwithstanding several questionnaires measuring the human–nature relationship are available they did not aim to measure empathy for plants and trees. With the present study we developed and validated the Empathy for Plants and Trees Inventory (EPTI)

starting from a sample of 705 university students. The EPTI is structured in two sections, one referring to plants and the other to trees. After factor analysis, in each section three factors emerged: Wellbeing empathy, Egocentric empathy, and Environmental sensitivity. Exploratory and confirmatory factor analyses (EFA and CFA) were conducted, followed by tests of measurement invariance across gender. Spearman's correlations with other validated questionnaires on sensitivity to nature and environment were examined. Confirmatory factor analyses supported the structure, showing a good model fit for both sections (plants: CFI = 0.9476, RMSEA = 0.0744; trees: CFI = 0.9478, RMSEA = 0.0692). Measurement invariance across gender was supported at configural, metric, and scalar levels. Correlations of EPTI with related constructs were in the expected direction with: Environmental Identity: $\rho = .61-.72$; Pro-Environmental Behavior: $\rho = .41-.46$; Environmental Concern: $\rho = .30-.44$; evidencing the construct validity of the instrument. The findings support the validity of the EPTI as a measure of empathy toward plants and trees. This instrument provides a structured assessment of human–nature affective relationships based on a multidimensional approach.

318. Le metafore della memoria umana usate dalle persone comuni

Igor Sotgiu¹, Luca Negri², Alessandra Zagato³, Marta Colombo¹, Barbara Cardaci¹, Chiara Mirandola³

¹ Università degli Studi di Bergamo, Dipartimento di Scienze Umane e Sociali

² Università degli Studi di Milano, Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti

³ Università Telematica degli Studi IUL, Dipartimento di Scienze Umane

Mini-talk · Memory

James, Neisser, Atkinson e Shiffrin, e Baddeley, insieme a molti altri ricercatori che hanno contribuito alla fondazione e all'evoluzione della psicologia scientifica, hanno descritto la memoria umana servendosi di metafore distinte, in larga parte di natura spaziale. Sfortunatamente, però, non esistono ad oggi studi che abbiano indagato in modo sistematico quali sono le metafore che le persone comuni utilizzano per rappresentare le caratteristiche principali e il funzionamento della memoria. Il presente studio si è proposto di esplorare questo argomento prendendo in esame un ampio campione di adulti residenti nel Nord e Centro Italia (N = 846, età media = 40.7 anni). Sono stati somministrati quattro strumenti self-report: un questionario per rilevare la metafora della memoria preferita dai partecipanti e le motivazioni soggiacenti alla sua scelta, un questionario sulle credenze ingenue sulla memoria, l'Autobiographical Recollection Test (Berntsen et al., 2019), e il Multifactorial Memory Questionnaire (Troyer e Rich, 2002). Le metafore della memoria citate in modo più frequente dal nostro campione sono state il "magazzino", la "macchina fotografica", il "computer" e la "mappa". Il contenuto delle motivazioni di scelta riportate dai partecipanti variava in modo significativo a seconda della metafora indicata come preferita. Le analisi di regressione logistica multinomiale hanno anche mostrato che la scelta di tre delle metafore più frequentemente citate (magazzino, macchina fotografica, mappa) era predetta in modo significativo da una serie di variabili sia sociodemografiche che metacognitive, che cambiavano però a seconda della specifica metafora scelta. Verranno discussi i limiti dello studio e le future direzioni di ricerca.

319. Arte o algoritmo? Ruolo dell'originalità e della rilevanza personale nel bias anti-IA nel giudizio estetico

Marco Sperduti¹, Dominique Makowski²

¹ Università di Roma Tor Vergata

² University of Sussex

Mini-talk · Emotions and motivation

La crescente diffusione di contenuti generati dall'intelligenza artificiale (IA) sta trasformando la produzione e la circolazione di materiali culturali, inclusi quelli artistici. Sebbene numerosi studi mostrino che la capacità di distinguere in modo affidabile un contenuto generato da IA da uno umano sia piuttosto limitata, l'esplicitazione dell'autorialità produce spesso un bias negativo: a parità di materiale, l'etichetta "IA" riduce la piacevolezza e il valore percepito dell'opera. Il presente studio indaga due possibili meccanismi alla base di tale effetto: il ruolo dell'originalità attribuita (opera umana originale, copia umana, opera IA) e quello della rilevanza personale dell'opera (self-relevance), intesa come il grado in cui essa "parla" all'osservatore. 305 partecipanti hanno valutato dipinti selezionati dal Vienna Art Picture System. Ogni immagine era preceduta da un'etichetta assegnata casualmente che ne indicava la fonte: umano originale, copia umana oppure IA. Per ciascuna opera sono stati raccolti giudizi di rilevanza personale e valutazioni estetiche relative a bellezza, interesse e profondità. I risultati mostrano che l'attribuzione all'IA riduce sistematicamente l'apprezzamento estetico e che tale effetto va oltre una semplice penalizzazione della copia. La rilevanza personale predice in modo robusto l'apprezzamento in tutte le condizioni ed è associata a una riduzione della differenza di valutazione tra opere attribuite all'IA e opere attribuite all'umano. I dati suggeriscono che il bias anti-IA non dipende esclusivamente dall'originalità attribuita e che il coinvolgimento personale modula l'impatto dell'autorialità sul giudizio estetico.

320. What we adapt to and what we control when we adapt control

Giacomo Spinelli¹, Simone Sulpizio²

¹ University of Zurich, Department of Psychology

² University of Milano-Bicocca, Department of Psychology

Poster · Attention, perception and consciousness

Control models typically assume that humans can adapt processing selectivity based on the current goal and context. One of the core demonstrations of this adaptive-control ability comes from the finding that, in the Stroop task, the congruency effect decreases as the proportion of congruent trials (e.g., the word RED in the color red) in a list increases and that of incongruent trials (e.g., RED in blue) decreases. Two key aspects of this ability, however, are yet to be fully determined: its source (what we adapt to) and its object (what we control). Indeed, most paradigms confound facilitation from congruent stimuli with conflict from incongruent stimuli as potential adaptive-control sources, and do not distinguish between the different types of conflict involved in the Stroop task (e.g., response, semantic, and task conflict), only some of which may be adapted to and/or controlled. To address this gap, in three Stroop experiments (total N = 324), we manipulated the proportion of several trial types to dissociate 1) conflict from facilitation as potential adaptive-control sources, and 2) the different types of conflict from each other as potential adaptive-control objects. We found that conflict and facilitation adaptive-control sources had a somewhat complementary impact on potential adaptive-control objects, with facilitation

having a larger impact overall. The implication is that adaptive control is likely different and more complex than assumed by control models thus far. Our results will help revise those models and refine our understanding of adaptive control.

321. Estimating inter-rater reliability in dichotomous classification tasks: when assumptions about category structure matter

Andrea Spoto¹, Michele Vicovaro¹, Umberto Granzio¹, Giovanni Bruno¹, Anna Panzeri², Giuseppe Mignemi³, Massimo Nucci¹

¹ Università di Padova, Dipartimento di Psicologia Generale

² Università di Bergamo, Dipartimento di Scienze Umane e Sociali

³ Università di Enna Kore, Dipartimento di Scienze dell'Uomo e della Società

Mini-talk · Methodology

Inter-rater agreement indices are commonly applied under the implicit assumption that raters assign each target to one of several mutually exclusive categories, corresponding to the levels of a single multinomial variable. Within this framework, agreement reflects the proportion of items assigned to the same category by different raters, and indices such as Cohen's κ or Fleiss' κ are straightforwardly interpretable. However, many applied settings violate this assumption. When raters evaluate whether each target belongs to multiple categories through independent binary decisions, categories are not mutually exclusive, and the resulting data structure departs from the standard multinomial framework. Despite the practical relevance of such scenarios, methodological guidance remains limited. This contribution shows how different assumptions about category structure determine the appropriate unit of analysis and, consequently, the interpretation of inter-rater agreement. When binary classifications across categories can be assumed independent, the data can be reformulated as a set of item–category pairs, each representing a separate binomial classification problem. Under these conditions, classical agreement indices can still be meaningfully applied, but their interpretation shifts from agreement on items to agreement on item–category combinations. In contrast, when non-mutually exclusive categories are also statistically dependent, standard agreement indices become difficult to interpret, and their use may be misleading. By making these assumptions explicit, the present work reframes inter-rater reliability as a model-dependent construct rather than a purely descriptive measure. Implications for applied research—particularly in contexts such as content validity assessment—are discussed, along with directions for extending agreement measures to more general dependency structures.

322. SWIFT: A Web-Based Cognitive Training Program to Promote Active Ageing

Franca Stablum¹, Francesca Biamino¹, Grazia Cerullo¹, Sabrina Cipolletta¹, Mauro Gaspari², Michele Persiani², Nicole Ballhausen³, Alexandra Hering³, Sara Zuppiroli⁴

¹ University of Padova, Department of General Psychology

² University of Bologna, Department of Computer Science and Engineering

³ University of Tilburg, Department of Developmental Psychology

⁴ CNR Bologna, Institute of Cognitive Sciences and Technologies

Poster · Attention, perception and consciousness

Ageing is often associated with a decline in executive planning and problem-solving abilities, potentially affecting wellbeing and functional independence. Tailored cognitive stimulation interventions, especially in collaborative settings, may help maintain these abilities by reinforcing self-efficacy. SWIFT

(Shared, Web-based, Intelligent, Flexible Training) is an AI-based tool designed to enhance planning and problem-solving through simulated real-life scenarios, available in both individual and collaborative settings. One hundred and six healthy older adults (aged 65–88; mean age 71.52) were randomly assigned to a collaborative training condition, an individual training condition, or a control condition. Training consisted of ten sessions in which participants planned a weekend trip by booking hotels, purchasing train tickets, and navigating a virtual city map. Near and far transfer cognitive measures (IGT, Stroop Test, PASAT, CFQ) and self-assessment questionnaires on digital skills and problem-solving were administered before and after training. Results showed meaningful improvements in participants' ability to articulate increasingly complex action plans. Baseline cognitive level and technological familiarity positively correlated with difficulty level achieved. Significant improvements were observed in IGT accuracy ($p=.014$), Stroop test ($p<.001$), and PASAT ($p<.02$). Experimental groups also reported enhanced perceived problem-solving ability (Wilcoxon, $p=.017$), while perceived digital skills remained stable. Differences in learning rhythm emerged between the two training settings. These findings provide preliminary evidence for SWIFT's effectiveness as a cognitive training tool, suggesting its potential to promote active ageing and functional independence through adaptive cognitive training. *This work was supported by the Velux Stiftung (Switzerland).

323. Individual Differences in Reflection-Based and Processing-Based Statistical Learning across Modalities

Doroteja Stamenkovic¹, Haoyu Zhou², Giulio Severijnen³, Eleonora Lippi¹, Louisa Bogaerts², Davide Crepaldi¹

¹ Department of Brain and Behavioural Sciences, University of Pavia, Italy

² Department of Psychology, University of Gent, Belgium

³ International School for Advanced Studies (SISSA), Trieste, Italy

Mini-talk · Language, reading and music

Statistical learning (SL) is the ability to detect regularities in the environment, and it has been implicated in language and broader cognitive functions. People differ in their SL performance; it is not clear, however, whether these differences are consistent across sensory modalities or across explicit and implicit metrics. To address this gap, the present study examined individual differences in visual (VSL) and auditory statistical learning (ASL) within the same participants, examining the consistency of these differences. Participants ($N=269$) completed a VSL and an ASL task online. Both tasks followed the same exact design, where exposure to embedded triplets carried an integrated target detection task with target locations alternating between predictable blocks and unpredictable blocks. As a processing-based measure of learning, response times (RT) in predictable blocks were compared to unpredictable blocks. Reflection-based learning was assessed in a post-exposure test of recognition and completion of sequences. Results showed above-chance explicit test performance in both VSL ($p<.005$) and ASL ($p<.001$), and a significant implicit RT advantage for predictable over unpredictable blocks in ASL ($M = 13.9\text{ms}$, $p < .001$), but not VSL. All our measures were sufficiently reliable to address individual variability (split-half reliabilities all above .57). We observed strong correlations between explicit and implicit measures within modalities (.61 for VSL and .57 for ASL), and weak correlations between modalities (.30 for the reflection-based metrics and .23 for the processing-based

metrics). These results offer important insight into the internal mechanisms of the human SL system.

324. Developmental Trajectories in a Dynamic World: Learning in Volatile Environments

Giulia Stefanelli¹, Lisa Toffoli², Fiorella Del Popolo Cristaldi², Duma Gian Marco³, Margherita Calderan⁴, Antonino Visalli⁵, Roberta Sellaro⁴, Vincenza Tarantino⁶, Giovanni Mento²

¹ University of Padova, Department of General Psychology

² NeuroDev Lab, Department of General Psychology, University of Padova, Padova, Italy

³ Scientific Institute IRCCS E. Medea, Conegliano (TV), Italy; NeuroDev Lab, Department of General Psychology, University of Padova, Padova, Italy

⁴ Department of Developmental Psychology and Socialisation, University of Padova, Padova, Italy

⁵ Department of Biomedical, Metabolic and Neuroscience, University of Modena and Reggio Emilia

⁶ Neuropsychology Lab, Department of Psychology, Educational Sciences and Human Movement, University of Palermo, Palermo, Italy

Mini-talk · Life cycle (e.g., development and aging)

Volatility, defined as the rate at which environmental contingencies change over time, plays a central role in adaptive learning by requiring continuous updating of expectations. Within this context, implicit associative learning (IAL) enables individuals to detect environmental regularities and generate implicitly context-dependent expectations. These expectations must be flexibly updated to support adaptive behaviour in dynamic environments. Although IAL is present early in life, most developmental studies have examined relatively stable contexts. Therefore, it remains unclear how sensitivity to environmental volatility develops across development and contributes to adaptive behaviour. We investigated developmental trajectories of IAL in a highly volatile environment using a novel behavioural Dynamic Associative Learning (DAL) task, adapted from Lawson et al. (2017, 2021). Typically developing children (N = 218; 3–14 years) responded to collect two targets by pressing left/right buttons on a keyboard. Two visual-auditory cues probabilistically predicted targets across blocks with varying predictability (80%, 50%, 20%), without participants' awareness. Results showed that children were faster and more accurate in expected than unexpected conditions, indicating successful IAL and exploitation of probabilistic regularities. Age had a strong main effect, with older children showing overall better performance. The expectation effect on RTs was stable across age, whereas accuracy showed a developmental pattern, with younger children not clearly adapting to task structure. These findings indicate that children can extract probabilistic regularities in volatile environments, with early-emerging IAL mechanisms that are expressed more efficiently with age.

325. Tracking Prior Exploitation in Visual Motion Perception: ERP Evidence for Predictive Processing

Sara Stottmeier¹, Giuseppe Di Dona², Alessia Santoni¹, Klara Hemmerich², Caterina Bertini³, Luca Ronconi²

¹ School of Psychology, Vita-Salute San Raffaele University

² Department of Psychology and Cognitive Science, University of Trento

³ Department of Psychology, University of Bologna

Intervento in simposio · Attention, perception and consciousness

Predictive processes are fundamental to optimally navigate our perceptual world. Motion perception exemplifies how the brain anticipates the trajectory of objects to interact with them appropriately. Despite being ubiquitous, the neural mechanisms

underlying these predictions remain unclear, especially whether predictive processing extends to "structural" priors, namely deeply ingrained through experience or intrinsic features of the sensory system. The present study aimed to track the neural underpinnings of predictive processing by recording EEG activity during the Representational Momentum (RM) task. The RM effect refers to the displacement of the perceived final position of a moving object towards the direction of motion, and it has been interpreted as a consequence of the predictive nature of motion perception. Event-related potentials (ERPs) were recorded from 60 participants while they detected discrepancies between the last position of a rotating bar and a subsequent stationary probe bar. Our results reveal modulation of the structural prior of rotation speed from early stages of visual processing, as reflected in the parieto-occipital P1. Parieto-occipital N2 and centro-frontal P3a modulations were consistent with both perceptual and expectation-based priors, being sensitive to motion direction and discrepancy detection. The centro-parietal slow wave (SW), instead, appeared to reflect later model-updating processes. At the individual level, amplitude differences in P3a and SW between detected and undetected discrepancies correlated with the behavioural RM measure. These findings describe a timeline of ERP activity underlying predictive processing in motion perception, providing novel insights into how the brain integrates structural prior knowledge to optimize perceptual decisions.

326. Motor-response execution is sensitive to the decisional dynamics of premotor processes: Evidence from the lexical decision task

Simone Sulpizio¹, Elisa Fiora¹, Michele Scaltritti²

¹ Università degli Studi di Milano-Bicocca

² Università degli Studi di Trento

Mini-talk · Language, reading and music

In the context of two-choice response-times tasks, the decision process typically continues even after the motor-response has been initiated and persists until the action is fully executed. Although substantial evidence shows that factors influencing premotor processes also affect motor execution, the functional relationship between these stages remains unclear. This study investigates this issue through two experiments featuring young and older adults: a standard lexical decision task (LDT) with words and pronounceable nonwords, and a deliberate LDT, in which participants categorized the same stimuli according to an internal criterion, in the absence of an objectively correct response. Single-trial electromyographic (EMG) recordings were used to partition RTs into a premotor time (PMT, from stimulus onset to EMG onset) and a motor time (MT, from EMG onset to button press). In the arbitrary LDT, both lexuality and age similarly affected PMT and MT, and did not interact. In the deliberate LDT, PMT was affected by lexuality, whereas MT was affected by the type of choice delivered by participants. Moreover, PMT modulated the effects exerted by the independent variables on MT. These results suggest that: a) PMT and MT reflect partially distinct components of the decision process; b) MT is also sensitive to how the process at the level of PMT unfolded.

T

327. Exploring Cerebral and Pupillometric markers of Suggestibility in Healthy Elderly Individuals: Forensic implications

Chiara Talin¹

¹ Department of Experimental Psychology of the University of Groningen

Intervento in simposio · Memory

The present study aims to explore potential cerebral and pupillometric indicators of suggestibility in healthy elderly individuals. It lays the groundwork for further research accounting for testimonial validity in vulnerable individuals, such as elderly population, in which suggestibility could be amplified due to declining cognitive functioning of natural aging. Specifically, Interrogative Suggestibility was assessed through the Gudjonsson Suggestibility Scale (GSS-2, Bianco & Curci, 2015). From the results of the Total Suggestibility score, two groups were identified: one exhibiting a low degree of suggestibility ($n=14$) and the other displaying a higher degree of suggestibility ($n=15$). Resting-state EEG frequency bands (HD-EEG 128-channel system) and pupil diameter (Eyelink Portable Duo) were then analysed in relation to these suggestibility levels. Based on Cognitive Load Theory framework, it was hypothesized that high suggestibility was associated with an elevated baseline arousal: higher pupil dilation, decreased alpha activity and increased theta activity. Results revealed significant differences in pupil dilation ($t[113]=27.16$, $p<0.001$), but no overall differences in frequency bands. However, significant results were found on EEG frequency activity and the indicators of resistance to the interviewer's pressure: Shift (Parietal Alpha: $t=2.16$, $p=.04$; Temporal Alpha: $t=2.13$, $p=.046$; Occipital Alpha: $t=2.26$, $p=.035$) and Yield 2 (Overall Theta: $t=-1.1$, $p=.039$; Parietal Theta: $t=-2.62$, $p=.034$; Occipital Theta: $t=-2.69$, $p=.014$), suggesting the crucial role of emotional factors linked to coping strategies. Indeed, suggestibility is a multi-faceted phenomenon that is mediated by various cognitive and personality variables which can be exacerbated under certain conditions.

328. Transcranial Direct Current Stimulation Effects on Mental States Recognition: the Moderating Role of the Cerebellum

Martina Tanieli¹, Eleonora Picerni², Libera Siciliano³, Nicole Urbini⁴, Federico Giove⁵, Michelle Pisu⁶, Simone Eugenio Costa⁷, Maria Leggio⁸, Giusy Olivito⁸

¹ Sapienza Università di Roma, Dipartimento di Psicologia

² Ataxia Research Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy

³ Department of Human Sciences, Link Campus University, Rome, Italy

⁴ Ataxia Research Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy

⁵ Ataxia Research Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy

⁶ Department of Psychology, Sapienza University of Rome, Italy

⁷ Neuroimaging Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy

⁸ Ataxia Research Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy

⁷ Department of Psychology, Sapienza University of Rome, Italy

⁸ Department of Psychology, Sapienza University of Rome, Italy; Ataxia Research Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy

Mini-talk · Social cognition

In recent years, the cerebellum has emerged as an important contributor to social and affective domains. In particular, evidence from transcranial Direct Current Stimulation (tDCS) studies has highlighted a crucial role of the cerebellar vermis in the implicit and affective components of Theory of Mind (ToM), although polarity-dependent effects remain inconsistent. The present study combines neuromodulation before an implicit

ToM task with structural MRI to determine whether individual variations in vermian volume may moderate polarity-dependent responses to stimulation. Thirty-nine adults completed the Reading the Mind in the Eyes Test, providing accuracy (ACC) as outcome. All participants underwent 3T Magnetic Resonance Imaging to quantify Gray Matter (GM) volumes of cerebellar lobules. Participants received anodal, cathodal (2 mA, 20 min) or sham tDCS over the cerebellar vermis. Behavioural testing was performed at baseline and 35 minutes post-stimulation. Linear mixed-effects models examined within- and between-group effects on ACC and tested whether vermal GM volumes moderated stimulation-related changes. No pre-post ACC differences emerged within stimulation group. However, the incorporation of structural measures in the analyses revealed a significant moderation of the group $\times$ time effect by vermian volumes. In particular, Vermis 1, 2, 3 volumes explained part of the inter-individual variance in ACC and were associated with responsiveness to anodal stimulation. The moderating role of cerebellar volumes highlights that the effects of neuromodulation on social functions may depend on individual structural features. This supports research examining additional modulatory factors, such as autonomic functioning, in which the cerebellum is strongly involved, towards personalized therapeutic protocols.

329. Aging shifts the influence of prior expectations from perception to action

Luca Tarasi¹, Margherita Covelli¹, Chiara Tabarelli¹, Caterina Bertini¹, Alessio Avenanti¹, Vincenzo Romei¹

¹ University of Bologna, Department of Psychology

Intervento in simposio · Attention, perception and consciousness

Aging alters how prior expectations shape perceptual decisions, yet the neural mechanisms underlying this shift remain unclear. Here, we combined behavioural modelling with high-density EEG to examine how younger and older adults use probabilistic prior information during visual perceptual decision-making. Participants performed a task in which cues biased the likelihood of upcoming sensory events, allowing us to dissociate the effects of expectation on sensory processing, decisional bias, and response preparation. Behaviourally, older adults relied more strongly on prior information than younger adults. This greater reliance was expressed in stronger decisional bias and reduced sensory precision, indicating an age-related change in the balance between incoming evidence and internally generated expectations. At the neural level, younger adults showed anticipatory modulation of posterior alpha rhythms, consistent with the use of priors to tune visual processing in advance. In older adults, this anticipatory sensory tuning was diminished, whereas central beta activity was enhanced, pointing to a stronger recruitment of motor-related preparatory processes aligned with expected responses. A data-driven decomposition further showed that prior-guided behaviour in younger adults emerged from a flexible interaction between sensory and executive oscillatory systems. In contrast, behaviour in older adults was dominated by a more rigid, response-centred neural mode. Together, these findings suggest that aging reorganizes predictive computations across large-scale brain networks, redirecting the influence of prior expectations from perceptual preparation toward action-oriented decision strategies.

330. From prediction to metacognition: multi-level mechanisms of perceptual decision-making

Luca Tarasi¹

¹ University of Bologna

Simposio · Attention, perception and consciousness

Perceptual decisions do not reflect sensory input alone. They emerge from an adaptive inferential process in which the brain weights current evidence against prior knowledge, recent sensory history, and internal bodily signals, while evaluating the reliability of the resulting judgment. This symposium brings together five early-career contributions that address this process at complementary levels - motion perception, auditory time perception, flexible decision-making, metacognition, and interoception - combining behavioural, computational, electrophysiological, neurostimulation, and developmental approaches. A first set of talks examines how different types of prior information shape perceptual judgments, from deeply ingrained structural regularities that bias motion perception at early visual stages, to the short-lived influence of recently encountered stimuli on auditory duration estimates. A second set moves from perceptual biases to adaptive control, investigating how observers flexibly reweight priors and sensory evidence according to contextual demands and identifying the oscillatory signatures that track this adjustment. Causal evidence from TMS over parietal and frontal regions complements this account by probing whether perceptual accuracy and decision confidence rely on dissociable neural substrates, framing metacognition as a distinct component of the inferential process. A final contribution extends the framework to interoceptive inference, examining whether the relationship between sensitivity to internal bodily signals and their metacognitive monitoring differs across developmental stages. Together, these contributions argue that perception, flexible control, and self-evaluation share common inferential principles expressed differently across sensory modalities, timescales, and life stages, inviting a broader discussion on how these mechanisms interact to support adaptive behaviour.

331. Prestimulus alpha frequency predicts perceptual sensitivity by increasing optimal phase likelihood

Luca Tarasi¹, Vincenzo Romei¹

¹ University of Bologna

Mini-talk · Attention, perception and consciousness

Alpha-band activity has long been implicated in perceptual processing, yet the functional significance of spontaneous fluctuations in alpha frequency remains unclear. Here, we tested whether trial-by-trial variations in prestimulus instantaneous alpha frequency predict perceptual sensitivity in a visual detection task. EEG was recorded while participants (N = 125) performed the task, and prestimulus alpha frequency was estimated on each trial and related to behavioral performance using complementary analytical approaches, including computational modelling based on Signal Detection Theory and the Drift Diffusion Model, as well as Bayesian analyses. We found that higher prestimulus alpha frequency predicted greater perceptual sensitivity and higher accuracy, indicating that spontaneous inter-trial fluctuations in alpha pace are functionally relevant for perceptual decision-making. Critically, the pattern of results supports a mechanistic account whereby faster alpha rhythms increase the number of phase cycles occurring within a fixed temporal window, thereby increasing the probability that incoming stimuli coincide with

phase angles associated with higher neural excitability and more accurate sensory encoding. These findings suggest that alpha frequency shapes perceptual sensitivity not merely by altering the pace of ongoing oscillatory activity, but by increasing the likelihood of alignment between sensory events and optimal perceptual phases. Overall, the results provide evidence that spontaneous alpha-frequency fluctuations play a direct role in shaping sensory sampling and perceptual decisions.

332. Cognitive Health and Early Vulnerability in Aging: An Integrated Perspective

Paolo Taurisano¹, Martina Amanzio², Paola Angelelli³, Davide Marocco⁴, Luca Tarasi⁵

¹ Department of Translational Biomedicine and Neuroscience (DiBrain) University of Bari "Aldo Moro"

² Department of Psychology, University of Turin, UniTO, IT

³ Department of Experimental Medicine, College ISUFI, University of Salento

⁴ Department of Humanistic Studies University of Naples Federico II

⁵ Department of Psychology, University of Bologna

Simposio · Life cycle (e.g., development and aging)

Cognitive aging is a heterogeneous process in which neurocognitive changes, psychophysiological factors, and frailty interact to shape different trajectories, from healthy aging to cognitive decline and neurodegeneration. This symposium offers an integrated perspective on recent mechanisms, markers, and clinical applications for promoting cognitive health in older adults. The contributions first address how aging reshapes predictive and decision-making processes at both behavioral and neural levels. They then examine how executive control, metacognitive awareness, and neuropsychophysiological markers may help identify vulnerability across the aging continuum, particularly in transitional conditions such as Subjective Cognitive Decline and Mild Cognitive Impairment. Building on this framework, the symposium discusses the role of neuropsychological assessment, combined with digital tools and high-sensitivity behavioral markers, in improving early detection of cognitive risk. It also highlights the contribution of embodied technologies and artificial intelligence to continuous, ecological, and multimodal monitoring of neurocognitive health. Finally, the symposium considers emerging intervention-oriented approaches, including caregiver-guided cognitive stimulation protocols for frail older adults. Overall, the symposium aims to show how the convergence of cognitive neuroscience, clinical neuropsychology, psychophysiology, and digital health can support more sensitive, personalized, and translational models for understanding, detecting, monitoring, and addressing early cognitive vulnerability in aging.

333. Neuropsychological Assessment, Digital Tools, and Early Markers for Advancing Cognitive Risk Detection

Paolo Taurisano¹, Giorgia Francesca Scaramuzzi¹, Daphne Gasparre¹, Valerio Manippa², Teresa Ventrella

¹ Department of Translational Biomedicine and Neuroscience (DiBrain) University of Bari "Aldo Moro"

² Department of Theoretical and Applied Sciences, eCampus University, Novedrate (Como)

Intervento in simposio · Life cycle (e.g., development and aging)

Early identification of individuals at risk for cognitive decline is one of the main challenges in contemporary clinical neuropsychology. While traditional neuropsychological assessment remains essential for defining individual cognitive

profiles, it may be less effective in capturing subtle, early-stage changes and ecologically relevant alterations that precede clinically overt impairment. In this context, digital tools offer a promising opportunity to enhance the sensitivity, precision, and clinical utility of cognitive assessment. This contribution will explore how the integration of standardized neuropsychological measures with digital technologies may improve the early detection of cognitive risk in aging and preclinical neurodegenerative conditions. Particular attention will be paid to the added value of digitalized cognitive tasks, high-resolution behavioral data, ecological assessment, and technology-derived indicators capable of capturing subtle changes in memory, executive functioning, and subjective cognitive difficulties. Rather than replacing traditional assessment, these approaches should be considered a meaningful extension of clinical neuropsychology, enabling a shift from a mainly descriptive framework toward a more predictive and individualized model. From this perspective, digital neuropsychology may contribute to earlier risk stratification, more effective longitudinal monitoring, and a better characterization of heterogeneous cognitive trajectories. Overall, the integration of neuropsychological expertise with digital innovation may represent a key step toward more sensitive, translational, and personalized approaches to cognitive risk detection and early intervention.

334. Emotional Granularity and Emotion Regulation: Network Modeling of Within-Person Concurrent and Prospective Emotional Dynamics Across Distinct Latent Sleep Profiles

Ilaria Telazzi¹, Michela Zambelli¹, Semira Tagliabue¹, Stefania Balzarotti¹

¹ Università Cattolica di Milano, Dipartimento di Psicologia

Poster · Emotions and motivation

Emotional granularity (EG) and emotion regulation (ER) are theorized to mutually influence each other, yet empirical evidence remains inconsistent. Individual differences in allostasis within emotional functioning may help explain these mixed findings. This study examined the bidirectional associations between positive and negative EG and five ER strategies, controlling for emotional intensity. To further elucidate the nature of the EG–ER relationship, these associations were explored both concurrently and prospectively across distinct sleep patterns, conceived as markers of allostasis. A 10-day experience sampling study was conducted with 255 participants. Sleep was assessed via morning diaries, and momentary emotional variables were measured through ecological momentary assessment. Multilevel latent profile analysis identified distinct sleep profiles; multilevel network modeling was applied within each profile to examine both contemporaneous and prospective associations among emotional variables. Findings revealed a timescale-dependent pattern partially moderated by sleep. Among good sleepers, no prospective EG–ER associations emerged. Among poor sleepers, however, maladaptive ER strategies predicted subsequent reductions in EG, with reciprocal effects also observed. At the momentary level, EG–ER associations were largely consistent across sleep profiles and involved both adaptive and maladaptive strategies. By integrating moment-to-moment emotional experience with daily sleep, this study advances understanding of how EG and ER dynamically relate across multiple timescales. Overall, the results suggest that EG–ER relationships are context-dependent and

moderated by sleep-related allostasis. Future research should incorporate modulators of allostatic regulation into multivariate models of emotional functioning to more fully capture how EG is associated with ER and other emotional components.

335. Struttura Fattoriale e Invarianza di Misura della Batteria APRO nella Selezione del Personale Marittimo: uno Studio Cross-Culturale

Michela Terrei¹, Giorgia D'ignazio², Leonardo Carlucci³, Laura Dattilo³, Lucia Del Signore², Michela Balsamo²

¹ Dipartimento di Psicologia, Università "G.d'Annunzio", Chieti-Pescara

² Dipartimento di Psicologia, Università "D'Annunzio", Chieti-Pescara

³ Dipartimento di Studi Umanistici, Lettere, Beni Culturali, Scienze della Formazione, Università di Foggia

Mini-talk · Methodology

La valutazione cognitiva nel settore marittimo è cruciale per la sicurezza operativa, poiché i fallimenti attentivi causano incidenti. La batteria APRO è usata nella selezione del personale. Questo studio ne esamina la struttura latente per verificare il modello teorico tripartito IPO e indaga la comparabilità dei punteggi tra gruppi di rango ed età, con due procedure di scoring. Da un archivio multinazionale sono stati selezionati marittimi ucraini (N=5.503; M=36.1 anni) e cinesi (N=1.820; M=33.4 anni). Sono stimati tre modelli di analisi fattoriale confermativa (CFA) — unidimensionale, I-P-O correlato e bifattoriale — con stima MLR per gestire la non-normalità. L'invarianza di misura è testata con CFA multi-gruppo per rango (cadetti, ufficiali, comuni) ed età (≤ 30 , 31–40, >40), replicando le analisi su punteggi di accuratezza (ACC) e z-standardizzati (ZSC). Il modello unidimensionale risulta l'unica soluzione ammissibile: nel modello I-P-O le correlazioni superano .90, mentre il bifattoriale genera Heywood cases. L'invarianza metrica è supportata, ma quella scalare non è confermata né per rango né per età, con violazioni maggiori nel campione ucraino ($\Delta CFI = -.062$ per età). Le analisi su ACC e ZSC convergono sulla stessa struttura, pur alterando il peso dei subtest sul fattore generale lungo la dimensione velocità-accuratezza. La convergenza su popolazioni culturalmente distinte supporta l'interpretazione dell'APRO come misura di un fattore generale (g). Tuttavia, la mancata invarianza scalare indica che confronti diretti basati su un'unica norma sono ingiustificati. Risultano necessarie l'adozione di norme stratificate per rango e una chiara definizione delle procedure di scoring.

336. Early Sex Differences in Cognitive Decline: Insights from Healthy, MCI, and Impaired Populations

Vittoria Torre¹, Simone Varrasi¹, Francesco Maria Boccaccio¹, Claudia Savia Guerrero¹, Giuseppe Alessio Platania¹, Lucia Privitera², Dario Cannavò³, Concetta Pirrone¹, Sabrina Castellano¹

¹ Università di Catania

² Barts and the London School of Medicine Queen Mary University of London Malta Campus

³ Centro Alzheimer – Psicogeriatría, ASP3, Catania, Italy

Mini-talk · Methodology

Mild Cognitive Impairment (MCI) is considered a transitional stage between normal aging and dementia. Increasing evidence highlights the role of sex in cognitive trajectories, with studies suggesting that women may experience a more rapid progression from MCI to dementia compared to men. Population-based findings further indicate that sex differences in cognitive decline persist across adulthood, although their

manifestation may vary depending on disease stage and clinical context. However, a key methodological limitation concerns the widespread practice of including sex as a covariate in statistical models, which may obscure biologically meaningful differences by removing sex-related variance rather than explicitly testing it. This study aimed to investigate the effects of sex and clinical status on global cognitive performance, controlling for age and education. A total of 88 participants (39 males, 49 females) were classified into three clinical groups based on MMSE scores: healthy, MCI, and impaired. Cognitive performance was assessed using the Montreal Cognitive Assessment (MoCA). Sex was modeled as a categorical independent variable. An ANCOVA was conducted including clinical status and sex as fixed factors, their interaction, and age and education as covariates. Results showed a significant main effect of clinical status ($p < .001$), with MoCA scores declining across groups. A significant interaction ($p = .009$) indicated sex-specific patterns of decline, with a significant difference between healthy and MCI participants in females, but not in males. These findings suggest that sex differences emerge in early stages of cognitive decline, supporting the importance of explicitly modeling sex in clinical research.

337. Evidence of Affordance Activation in Peripersonal and Extrapersonal space

Matilde Mariabarbora Torrisi¹, Dominik Marek², Fatmanur Sahin², Rea Rodriguez.Raecke³, Rik Sijben³, Usman Shaikh², Iring Koch⁴, Ferdinand Binkofski², Antonello Pellicano¹

¹ Università di Catania, Dipartimento di Scienze della Formazione

² RWTH Aachen University, Department of Neurology

³ RWTH Aachen University, Interdisciplinary Center for Clinical Research (IZKF)

⁴ RWTH Aachen University, Department of Psychology

Mini-talk · Attention, perception and consciousness

Recent studies provided evidence that grasping motor programmes can be elicited in the observer by presenting an egocentric hand paired with a graspable object. The observers represent the depicted hand as their own, performing faster and more accurate responses when the graspable part of the tool is aligned with their own responding hand (handle-to-hand correspondence effect produced by the activation of grasping affordances). In the present study, we focussed on the dependency of affordances on space investigating their activation in the peripersonal (PPS) and extrapersonal space (EPS). Two experiments were run. Pictures of tools with the handle facing left or right were paired with images of egocentric grasping hands. Participants pressed a left or a right key to the picture of the left or right grasping hand, whether aligned with the tool handle or not. In Experiment 1, the stimuli were presented in the PPS, while they were placed in the EPS in Experiment 2. The results revealed a significant affordance effect, with similar effect sizes, in both the experiments. We suggest that participants represented the depicted hand as their own, even when it was very far from their body. Indeed, the PPS boundaries and related action possibilities, such as affordances, have been extended. These results contribute to redefine the cognitive-motor representation of PPS and EPS, while opening different scenarios for the study of affordances.

338. What Shapes Cognitive Ageing? Risk and Protective Factors in European Older Adults

Carla Tortora¹, Irene Ceccato², Giulia Prete², Nicola Mammarella², Alberto Di Domenico², Constança Paúl³, Rocco Palumbo²

¹ University "G. d'Annunzio" of Chieti-Pescara, Department of Psychology

² University of Porto, School of Medicine and Biomedical Sciences (ICBAS)

³ University "G. d'Annunzio" of Chieti-Pescara, Department of Psychology

³ University of Porto, School of Medicine and Biomedical Sciences (ICBAS)

Poster · Life cycle (e.g., development and aging)

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a large-scale longitudinal study collecting data on health, socioeconomic status, and cognitive functioning in the population aged 50 and older. Wave 6, completed in 2015, is one of the most comprehensive waves and was examined to identify predictive factors of cognitive decline, using cognitive indicators collected seven years later through the SHARE-HACP module. Specifically, the present study focused on 2117 participants (52% female), aged between 68 and 102 years ($M = 78.77$; $SD = 7.22$), who completed the SHARE-HCAP module and showed no limitations in basic or instrumental activities of daily living (ADL/IADL) in Wave 6. Linear regression analyses were performed on MMSE and CERAD scores, along with a logistic regression model predicting global cognitive status. The linear regression analyses suggested that age, depressive symptoms, loneliness, and lower digital skills were associated with lower cognitive performance, whereas female sex, higher quality of life, and greater grip strength showed positive associations. In the logistic model, overall classification accuracy was 69.2%. Age ($OR = 1.04$, $p < .001$) and male sex ($OR = 0.28$, $p < .001$) were associated with increased risk, whereas quality of life ($OR = 0.95$, $p < .001$), digital skills ($OR = 1.21$, $p < .001$), and grip strength ($OR = 0.96$, $p < .001$) were protective factors. Overall, many psychosocial variables appear to be associated with cognitive decline, but modifiable factors such as digital literacy may play an important protective role, with potential benefits personal well-being.

339. Duck-Under the Glidepath: A Systematic Review of Black Hole Approaches in Airline Pilots

Sergio Traficante¹, Luigi Tinella², Antonella Lopez³, Andrea Bosco⁴, Alessandro Caffò⁴

¹ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

² Università Telematica Pegaso, Dipartimento di Psicologia e Scienze della Salute

³ Department of Humanities, Education and Sciences, University of Molise

⁴ Università degli Studi di Bari, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

Mini-talk · Attention, perception and consciousness

Misperception represents a critical phenomenon in transportation contexts. Anyway, a few number of studies focused on aviation, especially how airline pilots may experience specific misperception, putting them at risk of engaging in dangerous maneuvers and behaviors. One of these is the "black hole illusion" (BHI). The BHI manifests during nighttime approaches over featureless terrain; the lack of peripheral visual cues distorts the pilot's perception of both the glide path angle and distance. The pilot misperceives the aircraft's altitude, often initiating a hazardous descent. To understand this phenomenon more accurately, this study tries to synthesize the literature on BHI in the aviation context. A systematic search on the Web of Science and Scopus databases was conducted on April 15th, 2026. PRISMA

guidelines were followed. Eleven articles met the eligibility criteria. Evidence suggests that BHI is triggered during night visual approaches over featureless terrain, where the lack of peripheral cues distorts depth perception and glide path assessment. Other studies identify oculomotor fatigue and saccadic decay as primary catalysts, severely degrading the pilot's capacity to execute effective visual-instrument cross-checks. Consequently, the inherent cognitive tendency of prioritizing visual perception overrides critical avionic warnings. Infrastructural deficiencies, particularly the absence of functional systems (e.g., Instrument Landing System - ILS), serve to exacerbate vulnerability by eliminating objective visual glide path indicators. In conclusion, BHI leads to a visual dominance that overrides objective instrument data to resolve cognitive dissonance. Mitigation necessitates the training of pilots to proactively suppress the human tendency to "believe their eyes."

340. Causal Dissociation of Perceptual and Metacognitive Processes in the Dorsal Attention Network

Jelena Trajkovic¹, Alexander T. Sack¹

¹ University of Maastricht, Cognitive Neuroscience department

Intervento in simposio · Attention, perception and consciousness

Understanding how large-scale brain networks shape perceptual and metacognitive processes remains a central challenge in cognitive neuroscience. The present study investigates the causal contribution of distinct nodes within the dorsal attention network (DAN), specifically the frontal eye fields (FEF) and intraparietal sulcus (IPS), to perceptual accuracy, confidence, and metacognition. Building on prior evidence that FEF exerts top-down control over visual cortex via phase alignment in the lower beta band, we test whether the precise beta phase at which visual input arrives determines perceptual and metacognitive outcomes. Using a concurrent TMS-EEG approach, single-pulse TMS is delivered over FEF, IPS, or a control site (M1 foot) during a near-threshold visual detection task. Critically, the temporal delay between TMS and target onset is individualized based on each participant's intrinsic beta frequency, sampling distinct phases of the beta cycle. Participants report both detection and confidence, enabling dissociation of perceptual sensitivity and metacognitive evaluation. Results show that FEF stimulation modulates perceptual accuracy in a phase-specific manner, reflecting direct top-down influences on visual processing, whereas IPS stimulation preferentially affects subjective awareness and confidence, consistent with a downstream role in metacognitive evaluation. By combining individualized oscillatory targeting with causal perturbation, this study provides mechanistic insight into how phase-dependent network interactions shape both perception and awareness.

341. Lo spazio che cura

Maristella Trombetta¹, Anna Consiglio²

¹ Uniba-Dipartimento di Ricerca e Innovazione Umanistica

² Uniba - ForPsiCom

Mini-talk · Space, time and number

The paper explores the relationship between emotions and quality of life, starting from the psycho-physical unity of human experience, reinterpreted through the theory of resonance developed by Sarah Robinson, according to which mind and body jointly participate in the construction of meaning within lived environments. Emotion thus emerges as a relational

phenomenon generated by the dynamic interaction between organism and space. From the medical thought of Hippocrates to the therapeutic practices of the Asclepieia, and through the concept of catharsis articulated by Aristotle, the Western tradition has long acknowledged the regulatory and salutogenic function of emotions. Within this framework, the paper introduces the concept of the "emotional curvature of space", interpreting museums and cultural environments as aesthetic and relational devices capable of fostering emotional regulation, resilience, and well-being. Museum-based art therapy practices - narrative visits, slow looking, expressive workshops - configure artistic experience as a space of care, where vulnerability can be transformed into a resource and culture becomes a generative field for psychophysical balance.

342. When Context Matters: Measuring Risk-Taking Across Everyday Domains

Elena Turco¹, Federica Biassoni¹, Paola Iannello¹

¹ Università Cattolica del Sacro Cuore, Milano, Dipartimento di Psicologia

Mini-talk · Reasoning and abstract cognition

Starting from the expected utility framework, in which risk preferences are conceived as stable personality traits, psychological research has progressively shifted toward a risk–return framework, in which perceived risk varies across contexts and individuals. Within this perspective, risky decisions rely on the evaluation of potential costs and benefits, which may differ both between individuals and within the same individual across domains. Although risk can be conceptualized as either stable or context-dependent, most behavioral tasks assess general risk-taking. However, recent psychometric evidence supports a hierarchical structure of risk preference, combining a general component with domain-specific factors. Existing behavioral tasks overlook context-specific factors highlighted as theoretically and empirically necessary to consistently measure risk taking. The present project aims to preliminarily test a novel digital behavioral task based on nine textual scenarios designed to assess risk-taking across three everyday domains: mobility, health, and finance. The scenarios are structured into three levels of increasing risk to capture graded individual propensity. Risk perception is also measured through items targeting both its cognitive and affective components. Preliminary analyses on a sample of 64 participants (M age = 24, SD = 5.13; 46 females; target N = 150) show positive correlations between the scenarios and financial, ethical, and health subscales of the Domain-Specific Risk-Taking Scale. No significant correlations emerged with other risk-related constructs. Reliability and exploratory factor analyses were conducted. Overall, this work contributes to advancing the assessment of risk-taking by introducing a flexible, domain-sensitive tool with potential applications in both research and applied settings.

V

343. Memory enhancement in healthy ageing and Subjective Cognitive Decline: integration of strategic memory training and neurostimulation

Alice Valcarengi¹, Sonia Paternò², Chiara Ferrari³, Elena Cavallini², Sara Bernini⁴, Sara Bottioli⁵

¹ Department of Psychology, University "G. d'Annunzio" of Chieti-Pescara, Chieti, Italy

² Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy

³ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy; IRCCS Mondino Foundation, Pavia, Italy

⁴ IRCCS Mondino Foundation, Pavia, Italy

⁵ Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy; Unit of Research in Applied Psychology, IRCCS Mondino Foundation, Pavia, Italy

Mini-talk · Memory

Physiological ageing is associated with a decline in memory, affecting autonomy in daily life. Non-pharmacological interventions such as strategic memory training and transcranial direct current stimulation (tDCS) have attracted increasing interest. From a preventive perspective, it is important to evaluate their efficacy in healthy ageing and Subjective Cognitive Decline (SCD). The present double-blind randomized controlled trial aims to determine whether the integration of tDCS with strategic memory training leads to greater improvements in memory performance compared to strategic memory training alone. Thirty-six healthy older adults or with SCD (53% SCD) attended five strategic memory training sessions, while tDCS was applied over the left dorsolateral prefrontal cortex (DLPFC). Eighteen participants were randomly assigned to the experimental group (Mage = 71.67 ± 4.79; 44% female; MMMSE = 28.97 ± 1.05) receiving real anodic tDCS, and eighteen to the control group (Mage = 69.94 ± 4.42; 61% female; MMMSE = 28.67 ± 0.85) receiving sham tDCS. Their memory performance was evaluated before training (T0), immediately after (T1), and at one-month follow-up (T2). Preliminary analyses revealed a significant improvement in the primary outcome (i.e., paired-associates) from T0 to T1 in both groups, with a larger effect observed in real tDCS (d_{real} = 0.86) compared to sham tDCS (d_{sham} = 0.77). At T2, the improvement remained statistically significant only in the real tDCS group, indicating greater stability. Overall, the findings suggest that combining tDCS with strategic memory training yields more durable memory benefits than training alone, highlighting the added value of neurostimulation in cognitive interventions.

344. Seeing tools together: a perceptual signature of the cooperative mind

Luigi Valio¹, Stefano Uccelli², Maria Antonella Brandimonte¹, Nicola Bruno², Flavia De Simone¹, Giovanni Federico¹

¹ Università degli Studi Suor Orsola Benincasa

² Università degli Studi di Parma

Mini-talk · Attention, perception and consciousness

Human technology developed within shared social contexts, and convergent evidence suggests that cooperative settings served as a crucible for cumulative technological culture. However, whether this evolutionary inheritance leaves a signature on perceptual mechanisms for tool processing remains an open question. Here, we ask a minimal yet foundational question: Does the mere co-presence of another person alter how the human visual system parses a

manipulable tool? Twenty-three participants (10 F; Mage = 21.60, SD = 4.38) viewed images of common tools under two within-subject conditions: alone (solo) and in the co-presence of an unfamiliar peer (shared). Each trial comprised a 500-ms fixation cross, a 2000-ms stimulus, and a 3500-ms blank screen. For each tool, two Areas of Interest were modelled: a functional region carrying object identity (e.g., the hammer's head) and a manipulation region affording grasp and action (e.g., the hammer's handle). Gaze trajectories were analysed via Growth Curve Analysis. A significant AOI × Condition interaction emerged. When alone, participants prioritized the functional region, consistent with object recognition. Under co-presence, gaze shifted toward the manipulation region, overtaking the functional region by the end of exploration, a reorganization absent in the solo condition. These preliminary findings reveal that tools are seen differently alone than with others: social co-presence reroutes human vision from what an object is to how it could be wielded. Far from a peripheral modulator, social contexts appear woven into the very fabric of tool perception — a potential perceptual echo of the cooperative mind that made technology a human enterprise.

345. Seeing Listener, Shaping Speech: How Visual Cues and Listener Age Drive Speech Adaptation

Chiara Valzolgher¹, Elena Gessa¹, Elena Giovannelli¹, Tommaso Rosi², Francesco Pavani¹

¹ Center for Mind/Brain Sciences, CIMEC, University of Trento

² Level Up s.r.l.

Poster · Attention, perception and consciousness

Effective communication depends on adapting speech to a listener's needs. Across four studies, we examined how visible non-verbal cues and listener age expectations shape Lombard-like speech adjustments (e.g., reduced rate, increased intensity and pitch). In the first two, we tested whether visual cues alone, without auditory feedback, are sufficient to shape adjustments. Participants read sentences to a listener shown via a head-mounted display and were told their voice was heard under varying noise conditions. The listener was actually a confederate who displayed behaviors indicating different levels of listening effort pre-recorded using a 360° camera. In Exp 1 (n = 22), participants were told that background noise varied in the listener room, whereas in Exp 2 (n = 12) no such context was provided. Crucially, no change in auditory experience occurred for the speaker in any of the conditions. Across both experiments, speakers adapted their speech as a function of perceived visual effort. In Exp 3 and 4, we examined how these cues interact with expectations about listener age. Twenty young (Exp. 3) and 20 older adults (Exp. 4) addressed either a young or an older confederate displaying different levels of listening effort. Both groups increased vocal intensity and modified temporal and prosodic features under higher visible effort. Both groups showed stronger speech proportion adjustments when addressing the older listener, but only the younger participants assumed that the older listener understood less. Overall, these findings reveal the existence of a Lombard-like effect on speech driven by visual cues of listening effort.

346. Neural Modulation of Musical Reward: Dissociating Pleasure and Wanting-to-Move in Groove Responses

Colin Van Der Ende¹, Federica Biondi², Eleonora Fullone², Giorgio Lazzari², Carlotta Lega², Laura Ferreri²

¹ Maastricht University, Università di Pavia, Dipartimento di Scienze del Sistema Nervoso e del Comportamento

² Università di Pavia, Dipartimento di Scienze del Sistema Nervoso e del Comportamento

Poster · Language, reading and music

The reward response to music often captured through two closely related components within the groove experience: subjective pleasure and wanting-to-move. However, whether these responses can be dissociated at behavioral and neural levels remains unclear. The present study aimed to disentangle these responses by modulating cortical activity using transcranial direct current stimulation (tDCS), alongside manipulating stimulus expressivity. Ninety healthy non-musicians were randomly assigned to one of three stimulation conditions in a between-subject design: left dorsolateral prefrontal cortex (dlPFC), left dorsal premotor cortex (dPMC), or sham stimulation. Each participant listened to 60 piano excerpts (30 high-groove, 30 low-groove), presented in both mechanical and expressive versions. After each excerpt, participants rated their experienced pleasure and wanting-to-move. Results showed higher pleasure ratings following dlPFC stimulation, particularly for low-groove expressive stimuli. In contrast, wanting-to-move ratings were higher exclusively for high-groove stimuli, independently of stimulation and expressiveness. These findings support a partial dissociation between pleasure and wanting-to-move in response to music. Specifically, dlPFC stimulation selectively influenced pleasure without affecting motor-related responses, while dPMC stimulation did not show a clear involvement in groove-related affective experience. Overall, the results suggest that the music reward experience relies on partly distinct mechanisms, and that neural modulation shapes pleasure responses depending on musical characteristics rather than uniformly enhancing them.

347. The relationship between cognitive enhancement and aesthetic preferences

Greta Varesio¹, Irene Ronga¹, Giuliano Carlo Geminiani¹

¹ Università di Torino, Dipartimento di Psicologia

Intervento in simposio · Emotions and motivation

Within the field of neuroscience, growing attention has been devoted to the effect of preferred stimuli on cognitive functioning. Exposure to aesthetically preferred stimuli appears to foster an aesthetic attitude, i.e., a specific attentional attitude capable of enhancing perceptual elaboration as well as other cognitive functions, including memory and implicit learning. This first talk reviews recent neuroscientific literature exploring the relationship between cognitive functioning and subjective preferences for visual and auditory stimuli in the healthy brain. By leveraging neuroscientific analytical techniques, such as neural activity assessment through electroencephalography (EEG) and psychophysiological measures, alongside behavioural measurements, it is possible to observe systematic effects of enhanced learning and increase in curiosity during and after the exposition to preferred sensory stimulation. I will also present preliminary findings in clinical populations, such as post-stroke and MCI patients, highlighting the particular relevance of studying such cognitive modulation in the context

of neurological conditions and cognitive decline. The talk will address how these phenomena can be investigated across a range of experimental contexts, from paradigms employing well-controlled stimuli, to more applied settings involving ecologically valid stimulus types, such as self-selected music or exposure to artistic visual stimulations, potentially paired with creative tasks.

348. Prefrontal Cortical Plasticity and Clinical Outcomes Following iTBS in Major Depressive Disorder: A Longitudinal Study

Simona Vasta¹, Daniel Griffiths-King², Antonio Fratini³, Clementina Comitale⁴, Laura Di Giunta⁴, Silvia Picazio⁵, Giorgio Di Lorenzo⁶, Diego Andolina⁷, Viviana Betti⁷

¹ University of Messina

² Aston Institute of Health and Neurodevelopment (IHN), College of Health and Life Sciences, Birmingham

³ Aston Research Centre for Health in Ageing, College of Engineering and Physical Sciences, Birmingham

⁴ Sapienza University of Rome, Italy

⁵ Department of Human Sciences, Marconi University of Rome, Italy; IRCCS Fondazione Santa Lucia, Italy

⁶ Department of Systems Medicine, Tor Vergata University of Rome, Italy

⁷ Sapienza University of Rome, Italy; IRCCS Fondazione Santa Lucia, Italy

Mini-talk · Emotions and motivation

Major depressive disorder (MDD) is associated with alterations in brain structure and reduced neural plasticity, particularly within prefrontal networks involved in emotional regulation and cognitive control. Non-invasive neuromodulation techniques, such as intermittent theta-burst stimulation (iTBS), have emerged as promising approaches to induce neuroplastic changes and improve clinical outcomes. This longitudinal study investigated structural brain changes following iTBS applied to the left dorsolateral prefrontal cortex (DLPFC) in 11 patients with MDD and 11 healthy controls. The stimulation protocol consisted of five iTBS sessions per day for four consecutive days, delivered at 110% of the resting motor threshold. Measures were acquired at baseline (T0) and two weeks post-treatment (T1). Analyses focused on two predefined regions of interest (ROIs): the lateral orbitofrontal cortex and the rostral middle frontal cortex. Between-group differences were assessed. In the patient group, Pearson correlations were performed between changes in cortical thickness ($\Delta T1-T0$) and changes in clinical symptom severity. At T0, patients showed significantly reduced cortical thickness in both ROIs compared with healthy controls (Cohen's $d \approx -0.87$ to -0.95). At T1, these between-group differences were no longer statistically significant, indicating a shift toward a normalized structural profile. Both regions showed a trend toward increased cortical thickness in patients. Within the patient group, increases in cortical thickness were negatively correlated with symptom improvement ($r \approx -0.6$), indicating that greater cortical thickening was associated with greater reductions in symptom severity. These findings support role of iTBS in promoting targeted prefrontal cortical plasticity and contributing to clinical improvement in MDD.

349. Intrасaccadic visual changes alter post-saccadic perception

MADDALENA VASTO¹, Fatima Calace², Giovanni Mario Capolongo², Alessio Fracasso³, Antimo Buonocore²

¹ Università degli Studi Suor Orsola Benincasa

² Department of Educational, Psychological and Communication Sciences, Suor Orsola Benincasa University, Naples, Italy, 80135

³ Department of Psychology, University of Padua, Padua, Italy, 35131

Poster · Attention, perception and consciousness

Visual perception relies on integrating information across successive fixations, with peripheral input guiding eye movements and foveal input providing detailed information about objects. Here, we tested whether changes occurring during saccades disrupt this process. In two experiments, participants freely viewed natural images while intrasaccadic changes produced either matches or mismatches between the peripheral preview and the post-saccadic foveal input. In Experiment 1 (N=20), mismatches produced asymmetric effects depending on the quality of foveal input after the saccade. When a natural peripheral preview was followed by degraded (low-pass filtered) foveal input, fixation durations increased, indicating a processing cost. In contrast, when a degraded preview was followed by natural foveal input, fixation durations were largely unaffected. This asymmetry shows that trans-saccadic integration depends not only on pre-post congruency but also on the information available after the eye movement, with foveal input exerting a dominant influence. Notably, when incongruency involved only foveal-to-foveal transitions across successive fixations, the cost was reduced. In Experiment 2 (N=15), mismatches were defined in terms of spatial-frequency content (low-to-high and vice versa), thereby removing the natural-versus-degraded asymmetry. Under these conditions, both mismatch directions led to reliable increases in fixation duration, revealing a more symmetric sensitivity to discrepancies between peripheral and foveal information. Across both experiments, mismatch costs were strongest immediately after the saccade and diminished over subsequent fixations, indicating rapid adaptation. Together, these findings demonstrate that visual processing is dynamically updated across saccades, with post-saccadic foveal input playing a critical role in determining the efficiency of perceptual integration. Keywords: trans-saccadic integration, peripheral preview, foveal input, fixation duration, spatial frequency

350. Modulation of food choice by food labels: behavioural and neurophysiological Investigation

Anna Vedani¹, Maria Habib¹, Giulia Mattavelli²

¹ IUSS Cognitive Neuroscience (ICoN) Center, Scuola Universitaria Superiore IUSS, Pavia, Italy

² IUSS Cognitive Neuroscience (ICoN) Center, Scuola Universitaria Superiore IUSS, Pavia, Italy; Cognitive Neuroscience Laboratory of Pavia Institute, Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy

Mini-talk · Emotions and motivation

Background: Eating behaviours and neural responses to food are strongly modulated by individual and emotional factors, suggesting that food processing is highly sensitive to contextual and cognitive influences, such as exposure to food labels. The present study aims to investigate the modulatory effect of labels on food preferences and on neurophysiological correlates of food perception. Methods: Forty healthy participants (20 females; mAge 24.3±3.49) took part in the study. Participants learned the meaning of three labels (A, C, E corresponding to different levels in terms of health and nutritional value) through an explanation and conditioning phase. Then, during EEG recording, they completed a task in which each food item was preceded by a label and followed by liking and wanting ratings. Questionnaires on eating habits were also administered. Results: Results show that food liking was influenced by both labels and caloric content, with a general preference for high-calorie foods and for healthier food (label A). Wanting was modulated only by labels, with a significant reduction for unhealthy food (label E). Consistently, label-related ERPs modulations were observed, highlighting a convergence

between behavioral and neurophysiological measures. Conclusions: Overall, the findings suggest that food labels modulate both subjective evaluation and neural processing of food stimuli.

351. Dal modello animale all'uomo: il ruolo dell'ossitocina nella modulazione dei fenotipi comportamentali

Rossella Ventura¹, Marta Busnelli², Fabrizio Sanna³, Camilla Mancini⁴, Silvia Pizzetti⁵

¹ Dipartimento di Psicologia, Sapienza

² CNR, Istituto di Neuroscienze

³ Università di Cagliari, Dip di Scienze biomediche, Sezione neuroscienze ⁴ Università di Camerino

Simposio · Emotions and motivation

L'Ossitocina è un neuropeptide endogeno che svolge un ruolo centrale nella regolazione di processi complessi quali la motivazione, il comportamento sociale, la risposta allo stress e i meccanismi di rinforzo. Evidenze crescenti indicano come essa interagisca con i circuiti neurali che sottendono la regolazione emotiva e i sistemi di ricompensa, contribuendo a determinare traiettorie di vulnerabilità o di resilienza alla psicopatologia. In questo contesto, l'ossitocina è un modulatore trasversale di diversi domini comportamentali. Il presente simposio si propone di esplorare, attraverso i modelli preclinici e uno studio sull'uomo, il coinvolgimento del sistema ossitocinergico alla base di diversi fenotipi comportamentali, favorendo al contempo il dialogo con gli approcci traslazionali e con le prospettive della psicologia personalizzata. Nel primo contributo verrà approfondito il ruolo dell'ossitocina nello sviluppo del cervello sociale, evidenziandone anche il potenziale come intervento terapeutico precoce nei disturbi del neurosviluppo caratterizzati da difficoltà nelle interazioni sociali, sulla base di studi condotti su modelli animali. Nel secondo contributo verrà discusso il coinvolgimento dell'ossitocina nel contesto della dipendenza da alcol, anche nell'ottica di un suo possibile utilizzo terapeutico per la prevenzione della ricaduta. Tramite una manipolazione precoce che modella l'alterazione del legame di attaccamento nel topo, nel terzo intervento verrà esplorato il coinvolgimento dell'ossitocina nel fenotipo simil-depressivo correlato a tale alterazione. Nel quarto intervento verrà presentato uno studio traslazionale volto a indagare il legame tra ossitocina plasmatica e vulnerabilità allo sviluppo di depressione a seguito dell'esposizione a diverse forme di esperienze precoci avverse.

352. Effectiveness of a Virtual Reality rehabilitation in stroke patients with sensory-motor deficit: a pilot study

Sara Ventura¹, Giada Lullini², Sara Castaldini², Cristina Russo³, Alessia Tessari³

¹ Dipartimento di Scienze Mediche e Chirurgiche, Università di Bologna

² UOC di Medicina Riabilitativa e Neuro-riabilitazione, IRCCS Istituto delle Scienze Neurologiche di Bologna, Azienda USL Bologna

³ Dipartimento di Psicologia, Università di Bologna

Mini-talk · Health, sport and wellbeing

Introduction: Stroke is the second leading cause of death in Europe and a major cause of long-term disability, with upper limb motor, sensorimotor, and proprioceptive impairments frequently affecting survivors. These deficits can alter body representation and embodiment, compromising ownership, agency, and awareness of the affected limb. Recent evidence

suggests that Virtual Reality, particularly when integrating body illusion paradigms, may enhance neuroplasticity and improve motor recovery after stroke. Method: This study aims to investigate the effectiveness of a Virtual Reality rehabilitation program for upper limb sensorimotor and proprioceptive deficits. Participants who have had a stroke were randomly allocated to 4 weeks of Virtual Reality rehabilitation program with 3 measurement times (baseline, pre and post-intervention). Results: 12 patients took part at the pilot study (Mage = 52.08, SDage = 16.03). Results of non-parametric analysis demonstrated a significant improvement in motor abilities: Motricity Index (shoulder $Z = -2.060$ $p = .039$, elbow $Z = -2.264$ $p = .024$, pinch $Z = -2.549$ $p = .011$, and total score $Z = -2.937$ $p = .003$); Fugl-Meyer total score on motor abilities including shoulder, wrist, hand and coordination and speed ($Z = -1.957$ $p = .050$); Box and Block ($Z = -2.670$ $p = .008$). However, patients did not improve in Rubber Hand Task of their injury arm: Embodiment ($Z = -.178$ $p = .859$), Disembodiment ($Z = -.770$ $p = .441$), Physical sensations ($Z = -.079$ $p = .937$). Discussion: Virtual Reality could be defined as a potential mediator for sensorimotor rehabilitation, research must be improved.

353. From sign-tracking to precision treatment in tobacco use disorder

Francesco Versace¹, Charles E. Green², Yong Cui², Jason D. Robinson², Menton M. Deweese², Jennifer Minnix², George Kypriotakis², Maher Karam Hage², Paul M. Cinciripini²

¹ Teh UNiversity of Texas MD Anderson Cancer Center, Department of Behavioral Science

² The University of Texas MD Anderson Cancer Center

Intervento in simposio · Emotions and motivation

Preclinical research has shown that individuals differ in their tendency to attribute incentive salience to reward-predictive cues. In animal models, individuals who attribute high incentive salience to reward-predictive cues (sign-trackers) are more likely to develop cue-driven maladaptive behaviors, including drug seeking, than those who attribute high incentive salience to rewards (goal-trackers). Our work extends this framework to humans and tests its clinical relevance for smoking cessation. We measured the amplitude of the late positive potential (LPP), a well-established electrocortical index of the motivational relevance of visual stimuli, while smokers viewed cigarette-related, pleasant, unpleasant, and neutral images. Using a classification algorithm, we identified two neuroaffective profiles: one characterized by larger responses to cigarette cues than to pleasant stimuli, analogous to sign-tracking, and the other showing the opposite pattern, analogous to goal-tracking. We then tested whether these neuroaffective profiles could inform treatment selection in a double-blind randomized clinical trial comparing varenicline with nicotine replacement therapy (NRT) in 158 treatment-seeking smokers. Bayesian analyses showed a high probability (~90%) that treatment efficacy differed by neuroaffective profile. Smokers with the sign-tracker-like profile benefitted substantially more from varenicline than from NRT, with end-of-treatment abstinence rates of 47% versus 11%. In contrast, for smokers with the goal-tracker-like profile, the advantage of varenicline was smaller (29% versus 17% abstinence rates). These findings show how the sign-tracking/goal-tracking framework can be translated from animal models to humans and leveraged to guide precision pharmacotherapy for tobacco use disorder.

354. Neurophysiological Correlates of Relaxation and Wellbeing: can a wellness experience in a spa influence the oscillation of EEG brain waves?

Benedetta Vignati¹, Laura Angioletti¹, Tommaso Pisani¹, Michela Balconi¹

¹ International Research Center for Cognitive Applied Neuroscience (IrcCAN), Catholic University of the Sacred Heart, Milan

Poster · Health, sport and wellbeing

This study investigates neurophysiological changes associated with a relaxation state induced by a spa experience. A sample of 20 participants (aged 20–60 years) took part in a 90-minute wellness program. A longitudinal pre–post design was employed, consisting of three phases: baseline (eyes open and closed, 2 minutes each), controlled breathing (2 minutes), and administration of self-report questionnaires assessing perceived well-being. During the baseline and breathing phases, EEG measures (Muse) and autonomic indices (Shimmer) were recorded. Repeated-measures ANOVA (time × electrode/Regions of Interest) revealed significant effects during the breathing task in the alpha band ($p < .001$), with differences between electrodes (TP9 < AF7; TP9 < AF8), and in the gamma band ($p = .039$), showing a significant post-intervention reduction (PRE > POST). ROI-based analyses, grouping frontal (AF7, AF8) and temporoparietal (TP9, TP10) regions, further indicated significant effects in the theta band ($p = .032$; $F < TP$) and alpha band ($p = .004$; $F > TP$), while autonomic indices were not significant. Changes in the alpha and theta bands, commonly associated with relaxation and attentional regulation, suggest a reorganization of brain activity consistent with a state of increased internal calm. Concurrently, the reduction in gamma activity indicates decreased high-frequency cortical activation. Overall, these preliminary findings suggest that spa experiences may selectively modulate both low- and high-frequency neural dynamics, providing relevant insights into the neurophysiological mechanisms underlying relaxation.

355. Enhancing hope and mental health in emerging adults through a blended intervention integrating metaphoric virtual reality: the “VR for Hope” Project

Daniela Villani¹, Elisa Pancini¹, Chiara Rossi², Anna Flavia Di Natale¹, Francesca De Salve³, Lorenzo Baglio³, Francesca Fraser³, Osmano Oasi³, Giuseppe Riva⁴

¹ Research Center in Communication Psychology (PsiCom), Department of Psychology, Università Cattolica del Sacro Cuore, Milano, Italy

² Department of Human Sciences, Università degli Studi Guglielmo Marconi, Roma, Italy; Humane Technology Lab, Università Cattolica del Sacro Cuore

³ Department of Psychology, Università Cattolica del Sacro Cuore, Milano, Italy

⁴ Department of Psychology, Università Cattolica del Sacro Cuore, Milano, Italy; Humane Technology Lab, Università Cattolica del Sacro Cuore, Milan, Italy

Mini-talk · Health, sport and wellbeing

The transition to adulthood, marked by identity exploration and developmental demands, necessitates core psychological resources, including a sense of purpose and positive relationships, for emerging adults. Within this context, hope, a future-oriented construct integrating agency and pathways thinking, is a core determinant of their well-being. The “VR for Hope” project aimed to evaluate the feasibility and preliminary efficacy of a blended brief five-session intervention in enhancing hope, mentalization and flourishing. The intervention included one first-person metaphoric Virtual Reality (VR) experience - depicting a leaf's journey along a river,

encountering obstacles and bifurcations before reaching a rose garden and flourishing - followed by four self-help audio sessions designed to guide reflection anchored to the initial VR experience. Forty-one emerging adults ($M=24.1$, $SD= 3.42$) completed pre-post self-report assessing hope (Adult Hope Scale-AHS), mentalization (Certainty about Mental States Questionnaire-CAMSQ) and flourishing (Flourishing Scale – FS). Results showed significant increases in hope agency and total hope as well as robust gains in both self and other mentalization capacity. Flourishing scores showed a slight increase in post-intervention. These preliminary findings suggest that a brief blended intervention, integrating metaphoric VR experiences and guided audio reflection, represents a promising approach for fostering future-oriented thinking and goal-directed behaviour in emerging adults. The pilot phase supports the feasibility of an on-going randomized controlled trial to strengthen the understanding of the intervention's effects.

356. TELETO: Validation of a new scale assessing attitudes toward Telemedicine among healthcare service workers in the Piedmont Regional Health Authorities

Marco Viola¹, Lorenzo Cena², Francesca Borghesi², Marta Alesina³, Michele Presutti³, Alessia Melito⁴, Adriano Leli⁵, Antonio Maconi⁴, Marta Betti⁴

¹ UniTO Università di Torino, Dipartimento di Psicologia

² UniTO, Dipartimento di Psicologia

³ S.S. Ricerca e Innovazione, S.C. Formazione, qualità e gestione del rischio clinico delle attività sanitarie, ASL TO3

⁴ Dipartimento Attività Integrate Ricerca Innovazione, DAIRI-R, Azienda Sanitaria Zero Regione Piemonte

⁵ Direttore Generale, Azienda Sanitaria Zero Regione Piemonte

Mini-talk · Health, sport and wellbeing

Telemedicine, the delivery of healthcare services remotely through digital technologies, has gained a central role after the COVID-19 pandemic, enabling patient monitoring, professional communication, and timely decision-making. It is a strategic tool to improve access and optimize resources. However, its implementation also depends on healthcare workers' attitudes, which remain less explored than patients' perspectives. A self-administered digital questionnaire was distributed to healthcare and non-healthcare staff across the 19 Regional Health Authorities (ASR) of Piedmont. The scale of Telemedicine (TELETO) was pre-tested (February-March 2024) on 784 healthcare workers from two ASRs. The study aims to validate this scale by assessing reliability, internal consistency, and concurrent validity with related constructs (technostress, resistance to change, and perceived work environment quality). Analyses include descriptive and correlational methods, followed by exploratory and confirmatory factor analyses (EFA/CFA) and regression models to evaluate the scale structure, group invariance, and relationships among theoretical constructs. The validation sample includes 4365 participants aged 22-70 years ($M = 49$; $SD = 10$), with a female prevalence of 76%, consistent with gender distributions reported in major healthcare organizations. Random split sample analyses (with EFA/CFA) support a unidimensional structure with high reliability ($\omega = 0.93$). Concurrent validity shows significant correlations with related constructs. The TELETO scale demonstrates strong psychometric properties and represents a valid and reliable tool for assessing attitudes toward telemedicine among healthcare service workers. Its use may support the development of targeted training and organizational interventions, promoting more effective implementation of

telemedicine solutions.

357. Implicit error monitoring and perceived ecological anxiety: The relationship between environmental dimensions and personal variables

Anna Laura Vlad¹, Michele Scandola¹, Giada Berardo¹

¹ Università degli Studi di Verona

Mini-talk · Reasoning and abstract cognition

Environmental problems influence cognitive and emotional responses. Eco-emotions like eco-anxiety, eco-guilt and eco-grief have an impact on how individuals perceive responsibility and regulate behavior. This study investigates how perceived environmental issues shape conflict monitoring, in particular, how eco-emotions (Ágoston, et al., 2022) and personal variables contribute to regulating cognitive and behavioral reactions. Thirty-two participants completed a battery of questionnaires and three implicit tasks: a Single Category IAT, that evaluates implicit attitudes toward environmental themes, an Eco-Flanker Task, that measures implicit conflict monitoring and cognitive control by embedding the classic Flanker paradigm within environmental responsibility scenarios and lastly the Pollution Distancing task that studies environmental decision-making and moral cost evaluation. Questionnaires studied eco-emotions, anxiety, empathy and pro-environmental behaviors. The Eco-Flanker Task revealed two main effects. First, participants responded more slowly in the pollution condition than in the no-pollution condition, this can suggest that perceived environmental responsibility increases cognitive load. Second, incongruent trials produced slower reaction times than congruent ones, confirming the expected conflict-monitoring effect of the Flanker task. Correlation analyses showed that higher levels of eco-grief, eco-guilt and personal distress were associated with a larger congruence effect, meaning more difficulty regulating cognitive conflict. Environmental degradation can increase cognitive load during conflict monitoring. Eco-emotions modulate this process, showing that emotional involvement in climate issues influences implicit cognitive control. The results support linking eco-emotions with processes of decision-making. The small sample size limits generalizability, but findings encourage deeper investigation on how environmental awareness shapes cognitive regulation in ecological contexts.

358. What false navigational memories reveal about semantic-spatial cognitive maps

Alessandro von Gal¹, Nicola Matteucci², Laura Piccardi¹, Raffaella Nori²

¹ Sapienza Università di Roma, Dipartimento di Psicologia

² Università di Bologna, Dipartimento di Psicologia

Mini-talk · Memory

Spatial memory is reconstructive, yet false memory research has rarely examined whether misinformation alters cognitive maps formed during active navigation. We investigated whether post-event misinformation distorts both landmark identity and allocentric spatial representations, and whether these distortions reflect an interaction between semantic and spatial memory. In the original experiment, 107 participants freely explored an immersive virtual urban square and were then assigned to either a control condition or a misinformation condition, in which additional false landmarks were introduced. After 24 hours, participants completed a landmark recognition task, an allocentric positioning task on a blank map, and a visuo-spatial working memory task. Misinformation increased

false recognition and false placement of non-experienced landmarks, while reducing memory for landmarks that had actually been present. False landmarks were not placed randomly: substituted and semantically plausible landmarks were integrated into coherent locations within the reconstructed map, often near their real semantic counterparts. In this experiment, visuo-spatial working memory selectively reduced the placement of weakly related false landmarks, suggesting that individual cognitive resources protect against spatial misinformation mainly when semantic support is limited. A preregistered re-analysis then directly tested the semantic-spatial link by examining whether semantic distance between misinformed landmark names and actually present landmark names, using cosine similarity, predicted Euclidean placement distance. Results showed that semantically closer false landmarks were placed closer to real landmarks. Together, these findings frame false navigational memory as a structured distortion of cognitive maps, showing that semantic relations bias not only what is remembered, but also where false memories are located in space.

Z

359. Longitudinal relationships between self-efficacy, motivation, and school performance: a cautionary comparison of analytical approaches

Michele Zacchilli¹, Giulia Raimondi², Tommaso Palombi³, James Dawe⁴, Barbara Cazzolli⁵, Elisa Cavicchiolo⁶, Sara Manganelli⁵, Fabio Alivernini⁵, Fabio Lucidi⁵

¹ Sapienza, Università di Roma, Dipartimento di Psicologia dello sviluppo e dei Processi di socializzazione

² Sapienza, Università di Roma, Dipartimento Interdisciplinare di Benessere, Salute e Sostenibilità Ambientale (BeSSA)

³ Sapienza, Università di Roma, Dipartimento di Psicologia Clinica, Dinamica e Salute

⁴ Università Mercatorum, Dipartimento Scienze Umane e Sociali

⁵ Sapienza, Università di Roma, Dipartimento di Psicologia dei Processi di Sviluppo e Socializzazione

⁶ Tor Vergata, Università degli Studi di Roma, Dipartimento di Medicina dei Sistemi

Mini-talk · Methodology

Il presente studio esamina le relazioni longitudinali tra motivazione accademica, autoefficacia scolastica e rendimento in un campione di 1170 studenti della scuola secondaria di secondo grado di Roma, attraverso tre rilevazioni distribuite nel corso dell'anno scolastico. L'obiettivo principale è replicare e ampliare la letteratura esistente su tali relazioni, confrontando il Cross-Lagged Panel Model (CLPM) con il Random Intercept Cross-Lagged Panel Model (RI-CLPM), al fine di valutare in che misura la scelta del modello analitico influenzi le conclusioni substantive. I risultati del RI-CLPM indicano che, a livello between-person, un'elevata autoefficacia percepita è associata a maggiore autodeterminazione motivazionale e a migliori performance scolastiche. A livello within-person, tuttavia, contrariamente a quanto riportato in studi precedenti, non emergono effetti cross-lagged significativi tra autoefficacia e motivazione, suggerendo una prevalenza della stabilità intraindividuale rispetto alle influenze reciproche tra le variabili nel corso dell'anno. Al fine di ottenere un quadro interpretativo più completo e di esplicitare le possibili cause delle discrepanze con la letteratura, sono state condotte diverse analisi ausiliarie: un Latent Growth Curve Model (LGCM) per l'esame delle traiettorie di cambiamento longitudinale, e un RI-CLPM applicato a un sottocampione di studenti con rendimento

sufficiente. Nel complesso, i risultati sottolineano come l'integrazione di molteplici approcci di analisi longitudinale sia fondamentale per una comprensione approfondita ed ecologicamente valida delle dinamiche motivazionali nei contesti scolastici.

360. Item-Level Personality Predictors of Evaluative Conditioning Effects

Beatrice Zago¹, Daniele Romano¹, Marco Perugini¹

¹ University of Milano-Bicocca

Mini-talk · Methodology

Recent research has shown that individual differences in personality can influence Evaluative Conditioning (EC) effects, defined as the change in the evaluation of a stimulus resulting from its previous pairings with another valenced stimulus. The focus specifically was on personality traits and facets assessed through the Big Five and HEXACO-PI measures, revealing that certain traits, like Neuroticism and Agreeableness, tend to increase EC effects. However, personality structure is not only defined by broad factors or facets. More specific item-level characteristics, called personality nuances (NPs), have been shown to have even greater predictive validity than broad-factor models. The present research aimed to investigate the moderating role of specific personality nuances on EC effects. The research includes an exploratory and a confirmatory study. In the exploratory study, participants (N=408) completed the 100NP questionnaire (198 items) before performing the EC paradigm. Multilevel Bayesian analyses showed that 70 nuances potentially moderate the EC (i.e., 90% of the posterior density of the moderation is larger than 0). The confirmatory study is currently underway and will allow to identify nuances with reliable effects. Participants complete the same procedure as in the exploratory study, with a 94-item personality questionnaire (70 potentially relevant and 24 control nuances). The sample size (N=490) was determined through frequentist and Bayesian simulation-based power analyses and provides a .98 probability of detecting the expected moderation effects. Overall, these findings will contribute to a more fine-grained understanding of how personality shapes EC.

361. How do you react to daily events? Development and Content Validity of the Daily Events Management Scale (DEMS)

Michela Zambelli¹, Elena Torno¹, Anastasia Galkina¹, Semira Tagliabue¹, Susan Branje²

¹ Università Cattolica del Sacro Cuore

² Utrecht University

Poster · Methodology

Daily events management strategies encompass diverse cognitive and behavioral efforts individuals employ to manage occurrences and their associated emotional states on a daily basis. The ability to reprocess events of daily living, whether positive or negative, is one of the key competences for the development of self and personal growth (Czyowska & Gurba, 2021). Existing literature focuses mostly on the management of traumatic and negative experiences (Jose et al., 2012), for which numerous self-report instruments are available (e.g. Connor-Smith et al., 2000), while there is lack of instruments suited to assess how individuals react and manage positive events and experiences. The current contribution presents the Daily Events Management Scale (DEMS), a self-report measure consisting of eleven items, designed to assess the management strategies that individuals adopt to react and

manage the occurrence of daily events, both positive and negative. The DEMS was developed within the context of the project “Young and Meaningful”, aimed at developing a framework to support late adolescents in the process of crafting a meaningful life project. The scale was developed starting from existing measures of coping strategies, and it was specifically tailored for daily diary studies, targeting the population of late adolescents and emerging adults. Preliminary evidence of content and face validity of the DEMS was collected by conducting cognitive interviews with the target population (i.e. Italian high school seniors, aged 18-19, from a diverse range of educational tracks, including lyceums, technical institutes and vocational institutes). Results and future validation steps are discussed.

362. Eye Tracking for Autobiographical Memory Detection: application to scene recognition

Andrea Zangrossi¹, Margherita Pucci², Filippo Petrin², Valeria Frezza²

¹ Dipartimento di Filosofia, Sociologia, Pedagogia e Psicologia Applicata (FISPPA), Università di Padova

² Dipartimento di Psicologia Generale (DPG), Università di Padova

Intervento in simposio · Memory

Autobiographical memory (i.e., the ability to recall personally experienced events) plays a critical role in forensic contexts, where detecting such memories can inform legal decisions. Notably, autobiographical and recognition memory share neural mechanisms with systems governing eye movements and visuospatial attention. Accordingly, prior research shows that gaze patterns differ for previously encoded versus novel stimuli. The present study investigates whether eye-tracking metrics can detect recognition of autobiographical experiences. Specifically, we tested whether gaze behavior can (1) discriminate between previously visited and novel environments, and (2) distinguish between environments that were physically experienced and those that were only viewed as photographs. Participants viewed scenes belonging to three conditions: NEW (unfamiliar), VISITED (physically explored), and PHOTO (seen only as images). Eye movements were recorded during a recognition task. Preliminary results revealed that recognized scenes were characterized by lower fixation rates, longer fixation durations, and reduced saccade amplitude and velocity. Additionally, gaze patterns showed lower complexity and higher predictability, consistent with more focused attention. These findings suggest that eye-tracking provides a sensitive, implicit marker of autobiographical memory recognition. By enabling memory detection without requiring explicit responses, this approach may represent a valuable tool in forensic settings.

363. Eye-tracking e pupillometria: nuove frontiere in psicologia forense

Andrea Zangrossi¹, Liisa Camilla Gatto²

¹ Università di Padova, Dipartimento di Filosofia, Sociologia, Pedagogia e Psicologia Applicata

² Padova Neuroscience Center (PNC), Università di Padova

Simposio · Memory

Negli ultimi anni, l'impiego di tecniche di matrice neuroscientifica e psicofisiologica ha aperto nuove prospettive nella valutazione del comportamento umano in ambito forense. Tra queste, l'eye-tracking e la pupillometria si stanno affermando come strumenti particolarmente promettenti per l'analisi dei processi cognitivi ed emotivi sottostanti a testimonianze, decisioni e condotte rilevanti in sede giudiziaria.

Il presente simposio si propone di esplorare potenzialità e limiti di tali metodologie per applicazioni in ambito forense, evidenziando come lo studio dei movimenti oculari consenta di indagare le strategie spontanee di esplorazione visiva e i processi cognitivi ad esse associati, mentre le variazioni della dilatazione pupillare rappresentano un indice sensibile di carico cognitivo e di processi di riconoscimento mnemonico. Attraverso contributi teorici ed evidenze empiriche, verranno discussi diversi ambiti applicativi, tra cui la valutazione della menzogna, la memory detection, il riconoscimento di stimoli familiari e l'identificazione dei correlati oculomotori e pupillometrici di costrutti cognitivi chiave in ambito forense. Particolare attenzione sarà dedicata alle implicazioni etiche, ai problemi di validità ecologica e alle sfide metodologiche connesse all'utilizzo di queste tecniche in contesti applicativi. Il simposio intende offrire un quadro aggiornato e criticamente fondato sulle nuove frontiere dell'eye-tracking e della pupillometria in psicologia forense, promuovendo un dialogo interdisciplinare tra ricerca sperimentale e pratica professionale.

364. Soothing touch in chronic pain: investigating the beneficial effects of Affective Touch in Fibromyalgia

Ludovica Zanini¹, Gioele Calmi¹, Stefano Paolucci², Vincenzo Vinicola², Dario Graceffa³, Annalisa Tanzilli¹, Grazia Fernanda Spitoni¹

¹ Department of Dynamic and Clinical Psychology, and Health Studies, Sapienza University of Rome

² Santa Lucia Foundation, Scientific Institute for Research, Hospitalization and Health Care (IRCCS)

³ Department of Clinical Dermatology, San Gallicano Dermatological Institute (IRCCS)

Intervento in simposio · Social cognition

Fibromyalgia (FM) is a debilitating syndrome characterized by diffuse chronic pain in the absence of identifiable organic causes. Among numerous proposed hypotheses, FM has been conceptualized as a central sensitization syndrome, suggesting that the heightened experience of pain may arise from altered processing of nociceptive stimuli. Recent studies have shown that gentle, caress-like touch, mediated by C-tactile (CT) afferents, exerts soothing and pain-ameliorating effects in conditions of acute pain, pointing to a likely interaction between nociceptive and affective-tactile systems. In line with these findings, the present research extends this investigation to a syndrome hallmarked by chronic pain, namely FM. Study 1 first aimed to determine whether CT-mediated Affective Touch and other basic somatosensory functions were preserved in FM patients compared to healthy controls. Participants underwent screenings of tactile acuity, tactile sensitivity, heat pain threshold, and interoceptive accuracy, and were asked to evaluate the perceived pleasantness of CT-optimal (3cm/s) and non-CT-optimal (30cm/s) stimulations. With the exception of increased heat pain sensitivity in FM patients, the two groups were comparable across all other functions, including a preserved preference for CT-optimal touch. In Study 2, an intervention protocol was developed to investigate the beneficial effects of prolonged CT-optimal stimulation on pain perception and autonomic regulation in FM. The protocol involves 16 minutes of continuous CT-targeted touch, with preliminary outcomes focusing on pain reduction and increased Heart Rate Variability (HRV). Overall, these findings suggest that CT-mediated Affective Touch represents a preserved and potentially clinically relevant mechanism for non-pharmacological pain modulation in FM.

365. Emotional Needs and Motivations Underlying Chatbot Use: A Scoping Review

Pasquale Zappimpulso¹, Fabiana Battista², Tiziana Lanciano³, Antonietta Curci³

¹ Università degli Studi di Bari Aldo Moro, Dipartimento di Medicina di Precisione e Rigenerativa e Area Jonica (DiMePRE-J)

² Università Pegaso, Dipartimento di Psicologia e Scienze della Salute

³ Università degli Studi di Bari Aldo Moro, Dipartimento di Scienze della Formazione, Psicologia, Comunicazione

Mini-talk · Emotions and motivation

Within the framework of the ProBen initiative and the MoEBIUS project funded by the Italian Ministry of University and Research (MUR), increasing attention has been devoted to digitally mediated forms of emotional support. In this context, interactions with artificial intelligence (AI)-based chatbots are increasingly used not only for functional purposes but also to address users' emotional and psychological needs. This study presents a scoping review aimed at mapping and synthesizing empirical evidence on the emotional motivations underlying chatbot use. Following PRISMA-ScR guidelines, a systematic search in Scopus, Web of Science, and PubMed identified 15 peer-reviewed studies using qualitative, quantitative, and mixed-methods designs. Results indicate that chatbot use for emotional purposes is primarily driven by validation and non-judgment (87%), safe self-expression (87%), companionship (80%), and coping with distress (67%). These needs emerge in contexts characterized by barriers to traditional support (60%) and fear of judgment (47%), and are facilitated by features such as constant availability (60%) and low social risk (47%). Chatbot use is associated with both benefits and risks. Reported benefits include reduced distress (67%), emotional relief, and increased self-reflection, while risks include dependency (47%) and low-quality or misleading responses (53%). Emotional engagement often coexists with broader patterns of use rather than representing a fully distinct category. Overall, findings highlight the interplay between individual vulnerability, contextual constraints, and technological affordances, informing the design of safe and accessible AI-based support systems.

366. The cerebellar contribution to temporal cognition: Systematic review and meta-analysis

Kyle Sidney Zeilinga¹, Jacopo Barbiero², Margherita Calderan¹, Giovanna Mioni¹

¹ Università degli Studi di Padova, Dipartimento di Psicologia Generale

² Università degli Studi di Modena e Reggio Emilia, Dipartimento di Scienze Biomediche, Metaboliche e Neuroscienze

Poster / Mini-talk · Space, time and number

The cerebellum has been purported to subserve temporal cognition; however, the robustness of the evidence supporting this claim remains debated. In this study, we aimed to synthesise the evidence for the cerebellum's causal role in temporal cognition. Five electronic databases were searched until March 2025 for studies investigating temporal cognition following cerebellar stroke or transcranial magnetic stimulation (TMS). Studies on patients with degenerative disorders, children, or animals were excluded. Bayesian multi-level meta-analytic models estimated effects of cerebellar disruption, with sensitivity analyses assuming correlations of 0.3 and 0.5. The meta-analysis of stroke studies (12 studies, 325 participants) revealed a significant moderate deficit in temporal cognition following cerebellar stroke. Estimated effect sizes ranged from Hedge's $g = 0.27$, 95% Credible Interval (CrI) $[-0.49, -0.04]$, Maximum Probability of Effect (MPE) $= 0.99$, to g

$= 0.36$, 95% CrI $[-0.55, -0.15]$, MPE > 0.999 . The meta-analysis of TMS studies (12 studies, 280 participants) revealed no significant effect of transient disruption on temporal cognition. Estimated effect sizes ranged from $g = 0.02$, 95% CrI $[-0.21, 0.19]$, MPE $= 0.58$, to $g = 0.03$, 95% CrI $[-0.22, 0.16]$, MPE $= 0.65$. These findings suggest that permanent cerebellar lesions impair temporal cognition, whereas transient disruption via TMS does not yield comparable effects. The small number of available studies is a notable limitation, and these results underscore the need for further research to reconcile the diverging evidence between lesion-based and TMS-based methods.

367. The Personality and Sleep Difficulties Questionnaire (PSDQ): Development and Preliminary Validation

Cristina Zogmaister¹

¹ University of Milano-Bicocca

Mini-talk · Sleep

Sleep difficulties are increasingly prevalent among young adults, yet existing instruments fail to capture the specific personality mechanisms underlying them. This study presents the development and preliminary validation of the Personality and Sleep Difficulties Questionnaire (PSDQ), a multidimensional personality scale designed to assess personality traits relevant to sleep difficulties. Items were developed to cover theoretically relevant domains including emotional reactivity, cognitive rumination, impulsivity, stress sensitivity, mood regulation, social behavior, bedtime procrastination, and positive affectivity, and were rated on a 7-point Likert scale. A sample of 370 healthy young adults (Mage = 21.8; 83% female) completed the 74-item PSDQ and the Insomnia Severity Index (ISI). Exploratory factor analysis (Principal Axis Factoring, Oblimin rotation) supported a seven-factor solution accounting for 54% of the variance: Cognitive Rumination, Sensation Seeking/Evening Arousal, Bedtime Procrastination, Impulsivity/Behavioral Procrastination, Positive Affectivity, Perfectionism, and Social Withdrawal. All dimensions showed good-to-excellent internal consistency ($\omega = .79-.95$). All seven PSDQ dimensions correlated significantly with ISI total scores ($r = .13-.44$, all $ps < .05$), providing preliminary evidence of convergent validity. Gender differences emerged on Rumination, Perfectionism, Bedtime Procrastination, and Positive Affectivity, with women scoring higher on all these dimensions. These findings suggest that the PSDQ captures a multidimensional personality profile relevant to sleep difficulties, going beyond broad trait measures. A confirmatory study is currently being planned to validate a final reduced version of the scale.

368. From Intent to Action: Motor Planning and Online Control in Children With and Without Autism Spectrum Disorder

Stefania Zoia¹, Annamaria Guiotto

annamaria.guiotto@unipd.it¹, Irene Leo¹, Giuseppe Cossu², Silvia Gerola², Luisa Sartori³

¹ Università di Padova, Dipartimento di Psicologia dello Sviluppo e della Socializzazione

² Centro Medico di Foniatria di Padova

³ Università di Padova, Dipartimento di Psicologia Generale

Mini-talk · Action and movement

Introduction. Autism Spectrum Disorder (ASD) is a lifelong neurodevelopmental condition frequently accompanied by

motor difficulties that can affect participation in everyday activities (Miller et al., 2024). Although substantial motor impairments have been reported in up to 85% of individuals with ASD (Licari et al., 2020), they are still often regarded as secondary rather than central features of the condition (Kangarani-Farahani et al., 2024). **Method.** This study investigated how children with ASD plan and adjust a familiar goal-directed action under changing environmental constraints. Fourteen children with ASD (2 females; 8–10 years) and an age- and gender-matched control group performed a multi-step task requiring them to grasp a hammer and strike a peg. The hammer handle was presented in habitual and non-habitual orientations to examine whether children could rely on internal action representations while adapting their movements to object position. Upper-limb kinematics were recorded with 3-mm passive markers and a five-camera 3D optoelectronic system, and analysed to extract spatiotemporal movement parameters. **Results.** Group differences emerged in spatiotemporal organization, particularly in the capacity to implement rapid online corrections during action execution. **Conclusions.** These findings suggest that children with ASD can anticipate action requirements from object orientation, but may differ from typically developing peers in how they update ongoing movements when task constraints change. By examining planning and online control in a familiar tool-use action, the study contributes to a more nuanced understanding of motor learning and internal action models in ASD, with potential implications for assessment and intervention.

369. Identifying Developmental Dyscalculia in Adult Research: A Scoping Review

Sara Zonca¹, Luisa Girelli²

¹ Università di Pavia

² Università di Milano-Bicocca

Poster · Space, time and number

Developmental Dyscalculia is a specific learning disorder in the academic domain of mathematics, and, like other specific learning disorders, it persists into adulthood although its manifestation may change over time. Although prevalent in 3%–5% of the population, dyscalculia has mainly been overlooked compared to other learning disorders, particularly in adult populations. This scoping review explores the recent literature (2010–2024) on dyscalculia and mathematical learning disorders in adults, with a focus on diagnostic criteria, assessment methods, and participant categorization. Thirty-nine studies met the inclusion criteria, revealing inconsistencies in diagnostic practices and a lack of standardized assessment methods. These methodological drawbacks prevent establishing prevalence, tracking developmental persistence, and distinguishing dyscalculia from low achievement in mathematics. These findings highlight the need for standardized, adult-appropriate diagnostic criteria and instruments to enable cumulative research and equitable clinical practice. Addressing these gaps will be essential to move from descriptive to explanatory models of dyscalculia across the lifespan.

Con il patrocinio
e il contributo economico di



Con il patrocinio di



Segreteria organizzativa



Sponsor

