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Noto (SR)

Book of Abstracts

Contents

PhD prize / **470**

Exploring the role of interoceptive and exteroceptive signals in shaping corporeal awareness in women

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Corporeal awareness, namely the consciousness of one's body and sensations, is influenced by internal and external cues that interplay to create a coherent self-representation. Specifically, interoceptive signals (physiological internal signals), are crucial in shaping our perception of the body and processing specific sensations, such as pain. Part One of this thesis explores the influence of internal signals on bodily awareness in women. Crucially, interoception in chronic pain conditions affecting women has mainly been investigated through self-report questionnaires or cardiac interoceptive tasks. To address this gap, Study 1 examines how women with endometriosis, compared to healthy controls, process signals from three body districts: cardiac, gastric, and urinary. Since no non-invasive interoceptive task for bladder stimuli exists, a novel urinary interoceptive task is proposed to examine signal processing in chronic pelvic pain conditions, as these inputs originate from the pelvic area, the focus of these conditions. Study 2 investigates the role of breath, another interoceptive signal, in shaping corporeal awareness in healthy women, using the 'Embreathment' illusion, a virtual reality paradigm previously validated in men. Part Two focuses on how exteroceptive cues, particularly visual cues through virtual reality, shape women's corporeal awareness and behaviours. Study 3 describes how embodying a female role model (i.e., Angela Merkel) in virtual reality can alter women's implicit and explicit attitudes towards themselves, discussing the effects of different kinds of exposure: priming (i.e., exposure to a role model through an image), and embodiment (i.e., incorporating an avatar and acting accordingly to its bodily features, "Proteus Effect"). Study 4 explores whether exposure to a successful female model can support women's performance during a stressful virtual reality task (public speaking) by improving participants'performance, while also modulating stress-related physiological and hormonal signals (HRV, cortisol). Finally, the potential applications of these research lines in clinical and social contexts are discussed.

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PhD prize / **471**

Space, time and motion in a multisensory world

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The present doctoral thesis aims at investigating how humans represent space, time, and motion through auditory and visual sensory modalities. It has been demonstrated that hearing prevails in representing the time domain and vision in representing the space domain. Given this strong link between sensory modality and domain of representation, one objective of this thesis is to deepen the knowledge of the neural organization of multisensory spatio-temporal skills in healthy adults. In addition, by using blindness as a model to unravel the role of vision in the development of spatio-temporal abilities, this thesis explores the interaction of space and time in the acoustic motion perception of early blind individuals. This interaction was also investigated by questioning how the brain processes spatio-temporal cues of external events when it comes to manually intercepting moving objects with one hand.

Studies of the present dissertation indicate the following results:
i) the early cortical modulation of sensory areas depends on the domain of representation to process, with auditory areas mainly involved in the multisensory processing of temporal inputs, and visual areas of spatial inputs; the neural modulation of visual areas for the spatial domain is also influenced by the kind of spatial layout representing multisensory stimuli.
ii) the lack of visual experience in the first years of life influences the ability to process the speed of moving sounds by altering how blind individuals make use of the sounds'temporal features.
iii) people manually intercepting a moving object take into consideration the item's spatio-temporal cues, by adjusting their interceptive movements according to the object's speed.

Finally, in light of the above results, this dissertation incorporates the development of a novel portable device, named MultiTab, for the behavioral evaluation of the processing of space, time, and motor responses, through the visual and acoustic sensory modality.

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PhD prize / **472**

A Bridge Between Body and Environment in Egocentric-Allocentric Switching Processes: Evidence from Behavioural and Neuroimaging Studies

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Quando mangiamo, ci rappresentiamo la posizione delle posate rispetto a noi (soggetto-oggetto) o rispetto al piatto (oggetto-oggetto). In generale, codifichiamo le posizioni degli oggetti utilizzando un sistema di riferimento egocentrico o allocentrico. Frequentemente però, per raggiungere uno scopo, dobbiamo utilizzare entrambe le rappresentazioni: passiamo quindi da una rappresentazione spaziale egocentrica (forchetta-mano) ad una allocentrica (forchetta-piatto) e viceversa. Nonostante alcuni studi abbiano iniziato ad indagare la natura di questi processi di traslazione visuo-spaziale, aspetti come l'effetto delle caratteristiche ambientali, dell'età, il relativo carico cognitivo, ovvero le aree cerebrali che sottenderebbero questi processi, sono ancora inesplorati. Nel presente progetto i processi di traslazione visuo-spaziale sono stati indagati attraverso un compito appositamente progettato (Ego- Allo Switching Task). I partecipanti hanno memorizzato triadi di oggetti rispetto a cui sono stati poi richiesti giudizi di distanza relativa sia in condizione di traslazione (da-egocentrico-ad-allocentrico, da-allocentrico-ad-egocentrico) che di non-traslazione (solo-egocentrico, solo-allocentrico). Gli studi 1-2 hanno mostrato che ambienti virtuali ''disallineati" o ''non-ortogonali" influenzano negativamente i processi di traslazione visuo-spaziale, soprattutto quando si parte da un sistema di riferimento allocentrico (da-allocentrico-ad-egocentrico). Analogamente, gli studi 3-4 hanno mostrato che l'invecchiamento tipico compromette maggiormente i processi di traslazione visuo-spaziale che
partono da una rappresentazione spaziale allocentrica di tipo metrico. Attraverso l'utilizzo della pupillometria, lo studio 5 ha quindi dimostrato che questi processi di traslazione visuo-spaziale da-allocentrico-ad-egocentrico elicitano un maggiore carico cognitivo rispetto a quelli da-egocentrico-ad-allocentrico. Infine, lo studio 6 ha indagato, tramite la fNIRS, i correlati corticali sottostanti i processi di traslazione visuo-spaziale, mostrando il coinvolgimento di regioni fronto-parieto- temporali, e soprattutto della giunzione temporo-parietale, durante la traslazione tra sistemi di riferimento. Complessivamente, il lavoro offre nuovi contributi circa fattori endogeni ed esogeni che influenzano i processi di traslazione visuo-spaziale tra sistemi di riferimento, con potenziali applicazioni sia in ambito di ricerca che di user-centered design, specialmente a favore della popolazione

anziana.

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PhD prize / **474**

Assessment in Health Psychology: Development, Validation and Applications of Self-Report Tools for Patients and Caregivers

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Measurement is fundamental to accurately investigate constructs in psychological science, influencing the estimation of effects, the validity of study results, and ultimately replicability. Illness has a dramatic psychological impact on patients and (informal) caregivers, often termed "hidden patients" .
However, crucial constructs like uncertainty in illness (UI) and caregiver burden were overlooked from both psychometric and clinical perspectives. Moreover, existing assessment tools in health psychology often lack validation or are inadequately tailored for patients and caregivers.
This research aimed to enhance assessment methodologies in health psychology by developing and validating tools specific to illness-related constructs through original studies involving diverse patient and caregiver samples.
The first part details the development and psychometric validation of the Uncertainty in Illness Questionnaire (UIQ).
In Study 1, Exploratory Graph Analysis (EGA) identified four UI stable dimensions: uncertainty about symptoms, treatments, future change, and relationships.
In Study 2, Confirmatory Factor Analysis (CFA) supported a hierarchical second-order model, also demonstrating measurement invariance between patients and caregivers.
In Study 3, a Structural Equation Model (SEM) established the discriminant validity between UIQ and the Intolerance of Uncertainty Scale-Revised (IUS-R) confirming they measure distinct constructs.
The second part presents a short form of a widely used measure for caregiver burden, not previously validated. In Study 4, EGA detected three stable burden dimensions: impairment, emotions, uncertainty. In Study 5 a subsequent hierarchical second-order CFA model provided good fit.
The third part focuses on constructs relations, Study 6 tested a theoretically driven sequential mediation SEM, from IU, through worry and UI to anxiety, revealing good fit and a complete mediation effect.
Concluding, psychometrics can enhance research and societal benefits by accurately assessing health conditions, reducing costs, and ultimately improving individuals' psychological well-being. This research emphasizes the necessity of valid measures and robust statistics in quantitative psychology to improve research quality and replicability.

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PhD prize / 473

Induction of Hebbian associative plasticity through paired non-invasive brain stimulation of premotor-motor areas to elucidate the network's functional role

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The introduction of the TMS cortico-cortical paired associative stimulation (ccPAS) technique has spurred a paradigm shift in the study of brain connectivity: ccPAS targets cortical pathways, repeatedly stimulating nodes to transiently enhance/hinder their coupling, exploiting Hebbian spike-timing dependent plasticity. This allows manipulation of cortical networks, to study their physiological characteristics and functional relevance from a causal perspective.
The aim of this thesis is to leverage ccPAS to deepen the understanding of human visuomotor circuits, focusing on the pathway between the ventral premotor (PMv) and primary motor cortex (M1). Through its copious projections to the M1, the PMv is believed to be crucial for various visuomotor behaviors, such as arbitrary visuomotor mapping and hyper-learnt visuomotor associations underlying automatic imitation. Yet, causal evidence for the PMv-to-M1 network's functional relevance is limited.
A first series of studies investigated the physiological bases of ccPAS, and tested how it can affect the strength of effective connectivity and excitability of targeted areas. Secondly, we focused on the role of the PMv-to-M1 circuit in forming visuomotor associations. The application of brain-state-coupled ccPAS demonstrated the relevance of PMv-to-M1 connectivity to arbitrary visuomotor mapping, and the combination of ccPAS with behavioral paradigms used to study automatic imitation provided causal evidence of the pathway's role, within the action observation network, in automatic imitative behavior. Finally, we combined dual-coil TMS connectivity assessments and ccPAS in young and elderly individuals to trace the connectivity, plasticity, and relevance of premotor-motor networks to manual dexterity and strength in aging. In healthy elderly adults, we observed that a decline in connectivity and plasticity of the motor system predicted a decline in manual motor functions.
These findings highlight the efficacy of ccPAS in modulating cortical connectivity and behavior, offering valuable insights into visuomotor circuits. The research paves the way for clinical interventions based on connectivity manipulation.

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Symposia: Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività / 454

Paolo Bonaiuto all'Università di Bologna

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All'Università di Bologna, agli inizi degli anni '60 del secolo scorso, la ricerca psicologica era di impostazione gestaltista e si occupava soprattutto di fenomeni (prevalentemente di percezione, quasi esclusivamente visiva) e trascurava i processi che quei fenomeni producevano. Lo studio dei processi era lasciato alla neurofisiologia. Al termine del decennio la rivoluzione cognitivista aveva raggiunto Bologna e le ricerche psicologiche si occupavano soprattutto di processi. Ciò avveniva con l'impiego di procedure sperimentali molto avanzate (per esempio, la "deprivazione sensoriale") e con l'impiego di paradigmi di psicologia sperimentale nell'esame di pazienti cerebrolesi. Paolo Bonaiuto ebbe il

ruolo principale in questa evoluzione della ricerca psicologica a Bologna. Fu anche un pioniere nell' ottenere finanziamenti per la ricerca da istituzioni nazionali ed internazionali. Va infine sottolineato che l'intensa attività scientifica non gli impedì di proseguire le predilette indagini fenomenologiche, che continuò a svolgere attraverso i contatti con il Gruppo N di Padova.

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Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività

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Introduzione

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ASSESSMENT AND TESTING PROCEDURES FROM RESEARCH TO CLINICAL PRACTICE

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In recent years, the importance of constructing agile measures that can be applied to different clinical contexts for the evaluation of interventions has increased, as has the construction of instruments that find application in clinical practice. The aim of this symposium is to propose different evaluation strategies applicable to multidimensional interventions, the construction of instruments, and the assessment of the appropriateness of psychometric properties of measures that find application in clinical practice.
The contributions that will be covered in the symposium range from the application of methods such as Exploratory Graph Analysis and traditional techniques applicable to clinical practice and caregiver burden evaluation, to the assessment of coping strategies in the elderly and for the clinical diagnosis of autism, to the evaluation of the quality of distance learning.
The integration of modern and traditional techniques in psychological assessment allows for the validation of psychometrically valid assessment instruments with useful implications for clinical and research purposes.

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La dinamica nelle emozioni: un viaggio tra serie temporali e processi stocastici

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Le emozioni sono quanto di più sfuggevole possa esistere: elementi contingenti a momenti e a stimoli, che si susseguono l'un l'altro. Per secoli la letteratura, la filosofia e non per l'ultima la psicologia le hanno descritte individualmente delineandone i tratti comportamentali e fisiologici. Le emozioni discrete di Ekman o il modello Circonflesso di Russell sono tutti tentativi di descriverle nella loro forma statica. risultando mancante della loro caratteristica transitiva e temporale. Negli ultimi anni, nell'ambito della psicometria, una nuova corrente, chiamata **Affect Dynamics** si sta sviluppando, tentando di descrivere le emozioni nel tempo. Il disegno sperimentale più utilizzato è quell'Experience Sampling Method, un tipo di raccolta dati intensiva longitudinale in cui chiedo più volte al giorno, alla settimana o al mese di dare un rating alle proprie emozioni. I modelli matematici più utilizzati sono i modelli autoregressivi, che descrivono in termini di autolag o crosslag, quanto le emozioni nel lungo periodo siano statiche o dinamiche. Niente ancora è stato detto però sul breve periodo, su come indagare le transizioni emotive che abbiamo ogni qualvolta cambiamo stato affettivo. Lo scopo del nostro studio è di presentare i **processi Markoviani a tempo discreto** come un metodo matematico-statistico complementare ai modelli autoregressivi: essi si basano su catene stocastiche di transizione, considerando in questo caso quale sia la probabilità che il soggetto riesca a passare da uno stato affettivo all'altro, senza tener memoria di tutti i passaggi antecedenti. Considerando entrambi gli approcci metodologici saremmo in grado di delinare la dinamica delle emozioni nel complesso.

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Talk in Simposio proposto da Prof. Pietro Cipresso dal nome "Misurare spazio e tempo nella memoria e nelle emozioni"

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Decidere Emotivamente: Come le Emozioni Influenzano Giudizi e Scelte

Authors: Tiziana Lanciano[1]; Federica Alfeo[1]

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In un periodo storico in cui le scelte individuali e collettive acquisiscono una rilevanza scientifica e applicativa sempre maggiore, diventa essenziale comprendere le dinamiche emotive e cognitive che possono influenzare il processo decisionale. Confrontati con diversi scenari morali, gli individui possono sperimentare differenti emozioni, quali colpa o rimpianto, e talvolta vivere conflitti interni che influenzano significativamente il loro giudizio e comportamento. Nonostante l'importanza di tale ambito per il benessere psico-sociale, le evidenze empiriche risultano ancora abbastanza limitate. Il presente simposio si propone di offrire un contributo alla diffusione dei più recenti risultati ottenuti sul tema del rapporto tra emozioni e decisioni in vari contesti di vita, quali il gioco d'azzardo, gli atteggiamenti green, o scenari morali che suscitano colpa. Esplorare come le emozioni modellino giudizi e decisioni in contesti specifici potrebbe promuovere lo sviluppo di strategie mirate a prevenire l'insorgenza e la persistenza di comportamenti a rischio e/o patologici, oltre a promuovere il benessere e facilitare scelte più consapevoli ed eticamente informate.

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Misurare spazio e tempo nella memoria e nelle emozioni

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L'esplorazione della relazione tra spazio e tempo in psicologia offre nuove prospettive sull'analisi e comprensione della dinamica affettiva e sul ruolo dello spazio nella modulazione delle esperienze umane. Il simposio si concentra principalmente sull'applicazione di tecniche avanzate per l'analisi delle dinamiche affettive nel tempo e sull'impiego della realtà virtuale per la creazione di spazi controllati che influenzano la percezione e il comportamento.
Nell'ambito temporale, utilizziamo metodi longitudinali per tracciare le fluttuazioni delle emozioni, applicando modelli matematici come l'analisi delle serie temporali per identificare pattern di variazione affettiva. Questi approcci permettono di discernere le sequenze temporali di risposta emotiva e di prevedere le future manifestazioni affettive, offrendo così spunti cruciali per la psicoterapia e la psicologia clinica.
Parallelamente, la manipolazione delle variabili spaziali attraverso ambienti simulati si rivela essenziale per testare le loro influenze sulle funzioni cognitive ed emotive. Ad esempio, la realtà virtuale, in questo contesto, permette di creare ambienti spaziali altamente immersivi e controllabili, utilizzabili per esaminare le reazioni psicologiche in una gamma di scenari, da situazioni quotidiane a condizioni estreme. Questa tecnologia offre quindi un mezzo particolarmente efficace per studiare le dinamiche spaziali e le loro interazioni con i processi psicologici.
Considerare tempo e spazio nelle sperimentazioni e nell'analisi dei costrutti psicologici non solo arricchisce la nostra comprensione delle dinamiche psicologiche ma offre anche strumenti pratici per interventi più efficaci in ambito terapeutico e in altri contesti, anche interdisciplinari.

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Misurare spazio e tempo nella memoria e nelle emozioni

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Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività

Author: Stefano Mastandrea[1]

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Il simposio è dedicato a Paolo Bonaiuto, recentemente scomparso, studioso dei temi della percezione visiva e della psicologia dell'arte che aveva iniziato a sviluppare a partire dagli anni '60 del Novecento a Bologna. I suoi studi di matrice gestaltista –su temi come gli effetti di campo, la deprivazione sensoriale e le qualità espressive di manifestazioni dell'arte –hanno dato un contributo innovativo alla disciplina. La collaborazione con artisti, in particolare con il gruppo N di Padova e con Manfredo Massironi, ha prodotto sperimentazioni scientifiche e artistiche sui fenomeni percettivi. Questo clima di grande fermento culturale e interdisciplinare ha dato, attraverso le ricerche e gli studi condotti, un importante apporto alla nascente Psicologia dell'arte, soprattutto per gli aspetti inerenti i processi della visione nella fruizione dell'opera d'arte. Negli anni 2000-2004 Paolo Bonaiuto è stato Presidente della International Association of Empirical Aesthetics (IAEA), associazione che riunisce i più importanti ricercatori internazionali di estetica empirica.
Nel simposio, oltre che ricordare la figura di Paolo Bonaiuto e i suoi contributi teorici e metodologici nello studio della percezione visiva e dell'arte, saranno trattati diversi temi: il completamento amodale, la strutturazione dello spazio percettivo e la percezione pittorica; le caratteristiche espressive del movimento percepito in immagini statiche; le qualità espressive o terziarie come caratteristiche costituenti dei fenomeni percettivi; gli aspetti psicologici dell'esperienza cinematografica, dal movimento all'elaborazione delle diverse sequenze filmiche fino alle strategie per ottenere illusioni ambientali.

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Symposia: Assessment and testing procedures from research to clinical practice / 248

From the assessment to the intervention in aging: The Italian version of WHO-ICOPE (Integrated Care for Older People)

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As the elderly population continue to grow, there is an urgent need for innovative and comprehensive healthcare approaches to support the well-being of older individuals. The World Health Organization Integrated Care for Older People (WHO-ICOPE) is a holistic, comprehensive approach designed to address the multifaceted needs of elderly individuals, focusing on person-centered assessment and pathways within primary care settings.
In the light of the publication of the Italian version of the tool edited by Solimando, Barbagallo e Veronese (University of Palermo) and revised by the Authors of the present talk (https://iris.who.int/bitstream/handle/10665/326 FWC-ALC-19.1-ita.pdf), we want to show the ICOPE assessment process which emphasizes the importance of tailoring interventions to individual preferences, values, and circumstances. Drawing upon evidence-based practices and interdisciplinary collaboration, ICOPE represents a paradigm shift towards proactive and preventive care for older populations.
ICOPE evaluates various domains of health and well-being, including physical, cognitive, mental, social, and environmental factors. The assessment allows targeted and personalized care strategies. ICOPE also emphasizes the importance of collaboration among healthcare professionals, caregivers, and community resources.
By identifying risk factors and early signs of decline, healthcare providers can implement strategies to prevent or delay functional decline, frailty, and other age-related conditions, improving individual outcomes and reducing healthcare costs associated with managing preventable complications, as well.
In conclusion, our aim is devoted to elucidating the principles of ICOPE, its implementation strategies, and the potential impact on improving health outcomes and promoting healthy aging within primary care settings.

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ASSESSMENT AND TESTING PROCEDURES FROM RESEARCH TO CLINICAL PRACTICE

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Symposia / 141

Rivalutare la Plasticità Corticale: Intuizioni dalla Deprivazione Sensoriale Congenita

Authors: Francesco Pavani[1]; Roberto Bottini[2]

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Questo simposio mira ad approfondire le complessità della riorganizzazione e della plasticità corticale, in particolare in risposta a deprivazioni sensoriali congenite come cecità e sordità. Nonostante ampie ricerche, la portata e la natura della plasticità cerebrale in tali condizioni rimangono ambigue. Il simposio porrà in questione alcuni modelli teorici contemporanei, ispirato dalle recenti sfide alla nozione tradizionale di riorganizzazione corticale. Queste sfide suggeriscono che gli adattamenti comportamentali risultanti da cecità o sordità congenita, potrebbero non riflettere necessariamente

una riorganizzazione corticale, ma potrebbero piuttosto essere manifestazioni del potenziamento di architetture neurali preesistenti.
Esploreremo una gamma di prospettive, inclusa l'evidenza empirica da studi di neuroimaging e da osservazioni cliniche, per esaminare i modelli prevalenti delle mappe corticali e la loro riorganizzazione. Gli interventi valuteranno criticamente gli approcci metodologici nel mappare i cambiamenti corticali e discuteranno questioni concettuali nell'interpretare questi cambiamenti come vera plasticità o semplici attivazioni di strutture latenti.
Tra i temi chiave:
1. La revisione degli studi classici sul remapping corticale in individui ciechi e sordi congeniti.
2. Riconsiderazioni metodologiche nello studio della plasticità corticale utilizzando tecniche moderne di neuroimaging.
3. Dibattiti concettuali sul fatto che i cambiamenti corticali osservati costituiscano una riorganizzazione o siano semplicemente espressioni del potenziale architettonico intrinseco del cervello.
4. Possibili soluzioni teoriche che tengano conto della maggior parte dei risultati empirici disponibili.
Il nostro obiettivo è affinare il quadro teorico che guida la nostra comprensione della plasticità corticale e stabilire una nuova direzione per la ricerca futura in questo settore vitale delle neuroscienze cognitive.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / **349**

Multi-dimensional third-order statistical method to analyze cross-frequency coupling in EEG/MEG

Author: Alessio Basti[None]

Corresponding Author: alessiobasti@hotmail.it

In this presentation, I will begin by discussing the established methods for conducting cross-frequency analysis in functional neuroimaging. Following this, I will introduce a novel statistical approach known as Multi-dimensional Antisymmetric Cross-Bicoherence (MACB, [1]). Grounded in bispectral analysis, MACB aims to identify quadratic lagged phase-interactions among vector time series within the frequency domain, with particular relevance to electro/magnetoencephalographic signals. One significant advantage of MACB is its invariance under the choice of physical coordinate system in neuro-electromagnetic inverse procedures. Additionally, MACB addresses the challenge of information loss associated with dimensionality reduction analysis, a requirement in other standard approaches. Through extensive synthetic experiments, I will demonstrate MACB's superior performance compared to alternative metrics, particularly evident when dealing with shorter data lengths or higher dimensions of single data spaces. In conclusion, this talk will explore the potential of using the introduced multi-dimensional third-order statistical method to enhance the understanding of neural cross-frequency phase couplings.
[1] Basti, A., Nolte, G., Guidotti, R., Ilmoniemi, R. J., Romani, G. L., Pizzella, V., & Marzetti, L. (2024). A bicoherence approach to analyze multi-dimensional cross-frequency coupling in EEG/MEG data. Scientific Reports, 14(1), 8461.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Beyond Neural Connectivity: Exploring Higher Order Interactions in the Brain

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 144

La (mancanza di) vista è importante per V1? Nuova luce dallo studio del 'cervello cieco'.

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Il cervello deprivato dei sensi è da sempre stato considerato uno stimolante oggetto di studio per la comprensione della cognizione e del comportamento umano. Promosso dalla spinta delle neuroimmagini, il numero di studi che hanno descritto la neuroanatomia funzionale e strutturale nei ciechi congeniti o tardivi è aumentato costantemente negli ultimi anni. Queste osservazioni sulla cecità hanno offerto un'opportunità unica per comprendere fino a che punto l'esperienza sensoriale –o la sua mancanza –sia necessaria per modellare lo sviluppo, la maturazione e il funzionamento dell'organizzazione cerebrale nell'uomo.
I risultati raccolti finora concordano sul fatto che la maggior parte dell'architettura cerebrale si sviluppi e funzioni nei ciechi in modo simile agli individui vedenti. Questa prospettiva favorisce l'ipotesi che i moduli corticali possano elaborare le informazioni –almeno in una certa misura –in modo indipendente dalla modalità e, a sua volta, implica che il cervello umano sia in qualche modo pre-programmato per svilupparsi e funzionare nel modo in cui conosciamo. Tuttavia, il cervello deprivato di sensi subisce effettivamente una riorganizzazione strutturale e funzionale per la mancanza della vista. Inoltre, recenti risultati supportano anche l'idea che l'esperienza sensoriale sia comunque necessaria per il perfezionamento delle funzioni sensoriali di livello superiore. In questo contesto, la domanda impegnativa per i ricercatori riguarda il "destino"funzionale della corteccia visiva primaria (V1). Questa presentazione offrirà una panoramica aggiornata delle nostre osservazioni su V1 deprivata che continua ad elaborare caratteristiche percettive di basso livello trasmesse, attraverso modalità non visive.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Rivalutare la Plasticità Corticale: Intuizioni dalla Deprivazione Sensoriale Congenita

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 239

Beyond Neural Connectivity: Exploring Higher Order Interactions in the Brain

Authors: Livio Clemente[None]; Marianna La Rocca[1]

[1] *Università degli Studi di Bari*

Corresponding Authors: livio.clemente@uniba.it, marianna.larocca@uniba.it

Il cervello umano è una struttura complessa che opera attraverso una rete di interazioni a vari livelli, dalle singole cellule neurali a interi sistemi funzionali. Le interazioni di ordine superiore sono al centro di questa complessità e rivoluzionano il nostro approccio allo studio delle dinamiche cerebrali. Offrendo una finestra unica sul funzionamento del cervello, permettono di comprendere i meccanismi alla base della sua capacità predittiva e adattativa, producendo funzioni cognitive e comportamenti che vanno oltre le capacità dei singoli neuroni o delle aree cerebrali isolate. Nelle neuroscienze, le interazioni di ordine superiore si riferiscono a modelli di attività cerebrale che nascono dalla collaborazione di più componenti del sistema nervoso, dando luogo a un risultato che supera la somma delle singole parti. Questo approccio è essenziale per capire come il cervello elabora le informazioni, si adatta all'ambiente prevedendo gli eventi futuri. Il simposio si propone di studiare queste interazioni utilizzando metodologie innovative come la Multi-dimensional Antisymmetric Cross-Bicoherence (MACB) nelle serie temporali MEG, l'analisi dell'Information Interaction (II) nei dati EEG e lo studio della ridondanza e della sinergia nelle reti cerebrali ottenute attraverso un approccio multimodale basato su dati EEG/fNIRS. Sarà data grande attenzione anche alle applicazioni cliniche, esaminando come queste tecniche permettano di rilevare alterazioni della connettività cerebrale e della modulazione del dolore. La capacità di anticipare e reagire agli stimoli dolorosi, insieme alla valutazione degli effetti di terapie specifiche sulla connettività cerebrale, sono fondamentali per far luce sull'interazione tra le vie nocicettive e i meccanismi di modulazione del dolore centrale.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Decidere emotivamente: Come le emozioni influenzano giudizi e scelte / 14

Emotional Dynamics in Moral Decision-Making: Uncovering the Role of Proximity Using Interactive Dilemmas

Authors: Federica Alfeo[1]; Antonietta Curci[1]; Tiziana Lanciano[1]

[1] *Università degli studi di Bari*

Corresponding Author: federica.alfeo@uniba.it

Un conflitto morale si manifesta quando decisioni o giudizi implicano ragioni morali contrastanti. Studi trattanti il tema hanno adoperato spesso dilemmi morali sacrificali al fine di approfondire i meccanismi alla base del processo decisionale.
Nel presente studio sono state adottate versioni video interattive del Footbridge Dilemma per esaminare come la prossimità influenzi le decisioni morali. Ciascuno scenario, presentato in prima persona, mirava a evocare specifiche percezioni di distanza tra l'agente decisionale e la vittima, utilizzando una rappresentazione grafica accuratamente studiata e proponendo azioni coerenti con i livelli di prossimità illustrati. Con un approccio within-subjects, 261 partecipanti hanno deciso se intervenire (uccidendo un individuo) o non intervenire (permettendo la morte di cinque persone) per ciascun scenario. È stato indagato l'effetto della prossimità (alta, media, bassa) sul processo decisionale, considerando le scelte dei partecipanti e relativi tempi di reazione come esiti. Inoltre, sono state valutate la percezione della distanza e l'intensità delle emozioni provate sia nel momento della scelta che ripensando all'opzione scartata.
I risultati hanno mostrato variazioni nella percezione della prossimità a seconda dello scenario, influenzando significativamente le decisioni, ma non i tempi di reazione. Inoltre, una prossimità maggiore ha suscitato emozioni negative più intense.
Questo studio è il primo ad esaminare l'impatto della prossimità sulle decisioni morali attraverso l'uso di scenari video interattivi, offrendo un'analisi approfondita delle risposte emotive associate

a varie distanze. Esso fornisce importanti spunti e si pone come punto di partenza per ulteriori indagini che potrebbero fornire interessanti approfondimenti utili in molteplici ambiti.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Decidere Emotivamente: Come le Emozioni Influenzano Giudizi e Scelte

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività / 464

Ricordi personali

Corresponding Author: stefano.mastandrea@uniroma3.it

Symposia / 346

La Realtà virtuale come spazio per la psicometria: il ruolo dell'immersione nella valutazione della memoria

Authors: Valentina Mancuso[1]; Elisa Pedroli[None]

[1] *Department of Psychology, E-Campus University*

Corresponding Author: v.mancuso95@gmail.com

Lo spazio virtuale, fornito dalla realtà virtuale, rappresenta un nuovo setting per simulare le attività quotidiane nel campo della neuropsicologia. Questo ambiente può essere utilizzato per valutare le capacità cognitive come la memoria, le funzioni esecutive, l'attenzione e le abilità visuospaziali. Il ruolo dello spazio in questi contesti assume un significato particolare per la psicometria, soprattutto nella creazione di test in cui lo spazio diventa una variabile cruciale nello studio delle funzioni cognitive.
Lo studio qui presentato esplora l'importanza dello spazio virtuale: un gruppo di soggetti over 60 ha svolto un compito per l'assessment della memoria episodica e spaziale realizzato tramite i video a 360° su iPad, interagendo con gli ambienti virtuali attraverso il tocco. Un altro gruppo di soggetti ha invece utilizzato un visore di realtà virtuale per svolgere lo stesso compito. Oltre alla performance nei test di memoria, abbiamo raccolto dati relativi alla scala di engagement, affetti negativi, presenza spaziale e validità ecologica attraverso la ITC SOPI Scale.
L'obiettivo di questo studio è indagare l'impatto dello spazio virtuale sulla performance cognitiva, sull'accettazione da parte dei pazienti e sul senso di presenza. I risultati potrebbero contribuire significativamente alla comprensione del valore della RV nel campo della psicometria.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Misurare spazio e tempo nella memoria e nelle emozioni

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Decidere emotivamente: Come le emozioni influenzano giudizi e scelte / 46

L'effetto dell'anticipazione del regret sui comportamenti pro-ambientali

Author: Tiziana Quarto[1]

Co-authors: Aurora Bonvino [1]; Paola Palladino [1]

[1] *Department of Humanities, University of Foggia*

Corresponding Author: tiziana.quarto@unifg.it

Le ricerca di strategie di intervento volte a sviluppare ed incentivare comportamenti, pratiche ed atteggiamenti pro-ambientali è uno degli obiettivi della scienza contemporanea. In psicologia, è stato dimostrato che l'anticipazione del regret (rimpianto o rammarico) è un forte incentivo ad agire. Infatti, attraverso un ragionamento controfattuale, l'anticipazione del possibile regret collegato alla scelta porta i decisori a selezionare l'opzione che causerà loro il minor regret. L'obiettivo dello studio è stato quello di incoraggiare i giovani a prendere decisioni ecocompatibili manipolando il loro regret. Per dieci giorni, ogni giorno è stato inviato un EkoTok (breve video) tramite una chat di messaggistica istantanea a 128 giovani partecipanti. Dopo le misurazioni di base del comportamento pro-ambientale, gli individui sono stati divisi in due gruppi. Il gruppo sperimentale (GS) ha ricevuto EkoTok caratterizzati da un'esplicita anticipazione del regret. Il gruppo di controllo (GC) ha ricevuto solo filmati informativi. Le misurazioni del comportamento ambientale sono state raccolte nuovamente alla fine dei 10 giorni (post-test) e al follow-up, tre mesi dopo. I risultati mostrano un'interazione significativa tra i punteggi dei due gruppi durante i tre tempi di misurazione. In particolare, al post-test rispetto alla baseline, il GS ha punteggi più alti del GC nel comportamento pro-ambientale totale e nelle sottodimensioni di comportamento prosociale, riuso e riciclaggio, con un mantenimento o miglioramento al follow-up. I risultati forniscono un fondamento scientifico all' uso dell'anticipazione del regret all'interno di interventi sociali su più vasta scala.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Decidere Emotivamente: Come le Emozioni Influenzano Giudizi e Scelte

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Assessment and testing procedures from research to clinical practice / 207

The use of ADOS-2 in early diagnosis for Autism Spectrum Disorder: Explorative Graph Analysis.

Authors: Ilenia Le Donne[1]; Monica Mazza[2]; Margherita Attanasio[1]; Maria Paola Greco[1]; Nicole Covone[1]; Marco Valenti[2]

[1] *Department of Biotechnological and Applied Clinical Sciences, University of L'Aquila, L'Aquila, Italy*

[2] *Department of Biotechnological and Applied Clinical Sciences, University of L'Aquila, L'Aquila, Italy; Reference Regional Centre for Autism, Abruzzo Region, Local Health Unit ASL 1, Italy*

Corresponding Author: ilenia.ledonne@graduate.univaq.it

Autism Spectrum Disorder represents a neurodevelopmental condition characterized by a variety of behavioral manifestations. In addition, there has been growing awareness of the importance of early diagnosis and the development or revision of screening and diagnostic tools for autism. The Autism Diagnostic Observation Schedule –2 (ADOS-2) represents the gold standard in autism diagnosis, but identification of the latent factors underlying its items remains an area of clinical and research interest. The present study aims to investigate, using psychometric network analysis techniques, particularly Exploratory Graph Analysis (EGA), the underlying structure of the ADOS-2 items to identify latent factors and any patterns or clusters of items that are correlated with each other. This can provide hypotheses about how different symptoms of autism manifest and interact with each other. In addition, by analyzing the patterns of connection between items, it is possible to assess the internal consistency of the ADOS-2 and identify any items that may not be in line with the overall structure of the test. In addition, the predictive agreement between the Toddler Module and Module 1 of the ADOS-2, and the predictive effect of the two constructs shared by the two modules, namely Social Affect and Restricted and Repetitive Behaviors in the diagnosis of autism was evaluated. This work provides a new perspective on the use of the EGA to better understand the structure of the ADOS-2 and its cross-sectional validity in the diagnosis of autism.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

ASSESSMENT AND TESTING PROCEDURES FROM RESEARCH TO CLINICAL PRACTICE

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 156

La corteccia "visiva" nel non vedente: tra plasticità cerebrale e smascheramento di un'organizzazione cerebrale preesistente

Author: Stefania Mattioni[1]

Co-author: Olivier Collignon [2]

[1] *Ugent*

[2] *UCLouvain*

Corresponding Author: stefania.mattioni87@gmail.com

Quando osserviamo immagini di oggetti, paesaggi, volti, animali, una parte della nostra corteccia visiva si attiva per elaborare queste informazioni visive in arrivo.
Cosa succede a queste aree cerebrali in caso di deprivazione visiva totale? Negli ultimi 3 decenni un gran numero di studi ha esaminato questo argomento, definendo il fenomeno di riorganizzazione corticale o plasticità cerebrale. Questo fenomeno descrive la capacità del cervello di adattarsi e modificarsi in risposta alla perdita o alla mancanza di input sensoriale. Nelle persone cieche, le regioni del cervello solitamente coinvolte nell'analisi visiva possono essere riassegnate per elaborare informazioni da altri sensi, come tatto o udito. Questa riorganizzazione cerebrale è stata frequentemente interpretata come un circuito che accoglie un nuovo input e lo elabora in modo non correlato alla sua funzione originale. Tuttavia, recenti sviluppi nella ricerca sollevano una domanda intrigante: esiste davvero la plasticità cerebrale, o stiamo semplicemente osservando un'espressione di un'organizzazione cerebrale preesistente, che potrebbe essere riscontrabile anche in individui senza deprivazione sensoriale?
In questa presentazione, esploreremo questa domanda attraverso l'analisi di risultati ottenuti da recenti studi di risonanza magnetica funzionale che esaminano la (ri-)organizzazione della via visiva ventrale in individui affetti da cecità congenita o acquisita. Come spesso accade, la realtà si dimostra

più complessa della teoria: non tutte le aree visive rispondono uniformemente alla deprivazione visiva, così come differenti profili di cecità non reagiscono in modo omogeneo. In generale, sebbene in misura più limitata rispetto a quanto precedentemente descritto, i nostri risultati lasciano ancora spazio ad una possibile plasticità cerebrale.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Rivalutare la Plasticità Corticale: Intuizioni dalla Deprivazione Sensoriale Congenita

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 350

Interacion Information in fibromyalgic patients: an high-order analysis of EEG connectivity in response to Laser-Evoked Potentials

Author: Livio Clemente[None]

Co-authors: Daniele Marinazzo [1]; Marianna La Rocca [2]; Marina de Tommaso [3]; Sebastiano Stramaglia [4]

[1] *Department of Data Analysis, Faculty of Psychological and Educational Sciences, Gent University*

[2] *Università degli Studi di Bari*

[3] *Dipartimento di Biomedicina Traslazionale e Neuroscienze (DiBraiN) - Università degli Studi di Bari*

[4] *Dipartimento Interateneo di Fisica "M. Merlin" - Università degli Studi di Bari*

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Laser-evoked potentials (LEP) are widely used to investigate the nociceptive pathway in patients with Fibromyalgia (FM). Since FM causes widespread pain and cognitive impairment, it presents diagnosis and treatment challenges. Quantifying the interaction Information (II), a higher-order information theoretic quantity, on laser-evoked potentials can provide an analytical measure of its neuronal effects. This analysis may improve our understanding of the complex neurophysiological mechanisms underlying FM, potentially informing more personalized treatment strategies and enhancing patient prognosis. Ninety-three subjects were enrolled and subsequently assigned into four groups according to the results of the skin biopsy (controls n. 14; normal skin biopsy n. 19; proximal denervation n. 53; distal and proximal denervation n. 7). LEPs were recorded with a 64 channel EEG headset in three different sites (hand, knee, and feet). The exams consisted in 30 stimulations per site, after which the the perception of pain intensity was estimated through the Visual Analog Scale (VAS). We looked at the temporal interactions at the Cz electrode where the LEP is generally expressed. The EEG data were transformed via the Gaussian copula normalization and then, Information-theoretic quantities were calculated based on the transformed data. Statistical significance of the information-theoretic quantities was approached by cluster-based permutation testing, which corrects for multiple testing on all possible time point combinations without comprising power. This methodology represents a novel approach in the study of FM, highlighting the application of advanced information-theoretic analyses in the study of complex chronic conditions.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Beyond Neural Connectivity: Exploring Higher Order Interactions in the Brain

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività / 456

L'estensione come fattore espressivo di movimento implicito

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Corresponding Author: stefano.mastandrea@uniroma3.it

La rappresentazione del movimento su una superficie bidimensionale è stata da sempre una sfida per artisti, grafici e designer. Arnheim (1974), Cutting (2002), Massironi & Bonaiuto (1965) hanno proposto diversi fattori espressivi di movimento in immagini statiche, che possono essere sintetizzati in: rottura della simmetria, immagini multiple, sfocatura, diagonale e linee d'azione. Noi abbiamo aggiunto un nuovo fattore "Estensione", che si riferisce al grado di apertura degli arti per l'espressione di movimento implicito. In un primo esperimento abbiamo selezionato opere d'arte raffiguranti andature di cavalli: alt, passo, trotto, galoppo e galoppo volante à la Gericault (Mastandrea & Kennedy, 2019). I risultati hanno mostrato che il movimento implicito percepito aumentava progressivamente da alt a galoppo volante, in funzione dell'estensione delle zampe del cavallo. In un secondo esperimento abbiamo voluto confermare la validità del fattore estensione e abbiamo selezionato 20 fotografie di una ballerina in cinque posizioni (dalla semplice posizione eretta alla spaccata) per terra, in aria, frontale e laterale (Mastandrea & Kennedy, 2022). Anche in questo caso, la progressiva estensione delle gambe della ballerina produceva una maggiore percezione di movimento, soprattutto nelle posizioni in aria e laterali (considerate le più difficili). Inoltre, il movimento percepito correlava positivamente con la difficoltà della posizione e l'apprezzamento estetico. Possiamo affermare quindi che i risultati mostrano che l'estensione degli arti, in diversi contesti, può risultare espressiva di movimento. Per artisti e designer può essere utile sapere che l'estensione dà impulso al movimento implicito e che le posture difficili da realizzare possono riscuotere grande ammirazione.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Decidere emotivamente: Come le emozioni influenzano giudizi e scelte / 41

L'influenza dell'emozione di colpa sulle scelte

Author: Amelia Gangemi[1]

Co-authors: Chiara Rizzotto [1]; Febronia Riggio [2]; Francesco Mancini [3]

[1] *Università di Messina*

[2] *Dipartimento COSPECS, Università degli Studi di Messina*

[3] *Scuola di Psicoterapia Cognitiva, SPC, Roma*

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Una vasta letteratura dimostra che, nelle condizioni di incertezza tipiche della vita quotidiana, le scelte sono influenzate dal modo in cui sono formulate e rappresentate dai decisori, ma anche dai loro timori e desideri, così come dalle emozioni che sono attive nel momento della scelta. Ma come e in quale direzione avviene tale influenza? E come specifici stati mentali ed emotivi influenzano le scelte? In questa sede, vogliamo esaminare se e come una specifica emozione morale, la colpa, influenzi le decisioni. La nostra tesi è che la colpa, al pari di altri stati emozionali, spinga alla realizzazione di alcuni scopi specifici. Nello specifico, guiderebbe sia le scelte rischiose che quelle prive di rischio, al fine di perseguire l'obiettivo morale di ristabilire giustizia, riparando il danno causato alla vittima o espiando l'offesa. In questa direzione vanno i risultati di due differenti esperimenti. In entrambi, il fattore che ha influenzato significativamente le preferenze (certe o rischiose) dei soggetti è la rappresentazione del problema decisionale in termini di emozione indotta (colpa vs. rabbia vs. neutrale) e assunzioni morali, più che la semplice avversione al rischio o la formulazione delle opzioni di scelta. La colpa, al contrario della rabbia, non si caratterizza per una preferenza specifica per la certezza o il rischio: la scelta ricade sull'opzione che consente di assolvere lo scopo morale di espiare o rettificare il danno o l'offesa, indipendentemente dalla formulazione delle opzioni di scelta (guadagni/perdite). Tale effetto sopravanza dunque anche il ben noto framing effect di Tversky e Kahneman (1981).

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Decidere Emotivamente: Come le Emozioni Influenzano Giudizi e Scelte

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / **426**

V-MEB - un'applicazione immersiva per la valutazione della memoria

Authors: Elisa Pedroli[None]; Marco Cavallo[None]; Sara Arlati[None]; Simona Gabriella Di Santo[None]; Valentina Mancuso[1]

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V-MEB è una batteria innovativa per la valutazione dei deficit di memoria utilizzando la realtà virtuale. Sfruttando la potenza della realtà virtuale e dei video 360°, verrà creata una piattaforma innovativa ed ecologicamente valida per la valutazione della memoria. La batteria si comporrà di diversi subtests che analizzano le seguenti sottocomponenti della memoria: la memoria episodica, memoria spaziale, memoria prospettica e memoria semantica. Il protocollo di ricerca per lo sviluppo di una batteria ecologica per la valutazione della memoria comprende diversi subtest ambientati in una città virtuale. La batteria sarà progettata per essere eseguita in un ambiente virtuale utilizzando l'hardware Oculus Quest 3 con joystick. Ogni subtest richiede una combinazione di memoria episodica, spaziale, semantica e prospettica. Una volta terminato lo sviluppo verrà indagata l'usabilità dell' applicazione con soggetti sani ed esperti di usabilità basato su diverse tecniche di User Experience. Una volta perfezionata l'applicazione con le modifiche suggerite dagli utenti inizierà la raccolta dati per la validazione sia su soggetti sani che su pazienti con Mild Cognitive Impairment. Ai soggetti verrà dunque somministrata una batteria neuropsicologica che prevede la valutazione della memoria, delle funzioni esecutive, delle abilità visuo-spaziali. Una volta raccolti tutti i dati svolgeremo delle analisi per lo studio della validità convergente e divergente. Data la maggiore validità ecologica delle misure VR, si presume che il nostro test fornisca una misura migliore di memoria rispetto ai test tradizionali.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Misurare spazio e tempo nella memoria e nelle emozioni

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Assessment and testing procedures from research to clinical practice / 121

Validazione e standardizzazione di un nuovo strumento di assessment per la qualità della didattica a distanza: uno studio esplorativo

Authors: MARIA RITA SERGI[1]; MICHELA BALSAMO[1]; LAURA PICCONI[2]; MARCO TOMMASI[2]; CHIARA DI MARCANTONIO[2]; RAMONA BONGELLI[3]; GIORGIA D'IGNAZIO[1]; ARISTIDE SAGGINO[2]; ALESSANDRA FERMANI[4]

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Introduzione
Quale conseguenza dei limiti restrittivi imposti dal COVID-19, la Didattica a Distanza (DaD) trova tutt'oggi un'ampia diffusione. Nell'assessment della percezione della qualità della DaD, porre il focus misurativo sul "blended learning"e disporre di strumenti eminentemente qualitativi sono aspetti limitanti. Con l'obiettivo di fornire uno strumento quantitativo solido per la misura della percezione della qualità della DaD, la presente ricerca analizza le caratteristiche psicometriche di un nuovo strumento costruito ad hoc: il Perceived Quality of Distance Learning (PQDL; Sergi et al., 2023).
Metodo
Sono stati somministrati il PQDL, lo State–Trait Anxiety Inventory ed il Depression Questionnaire ad un campione di 429 studenti universitari (Età: M = 23.20; SD = 5.91). E'stata esaminata la dimensionalità e l'attendibilità del PQDL, l'invarianza strutturale per genere, attraverso l'analisi confermativa multigruppo e la validità predittiva, attraverso l'analisi di regressione.
Risultati
Dalle analisi fattoriali esplorative e confermative emergono due fattori per il PQDL: Pianificazione ed Organizzazione della DaD e Reazione Cognitivo-Emotiva alla DaD. Essi hanno una buona attendibilità (α = .86 e α =.865, rispettivamente) e una buona invarianza metrica (RMSEA = .062; ΔCFI <.01) e scalare (RMSEA= .068; ΔCFI <.01). Solo la depressione predice i due fattori del PQDL (t = −3.008, <.05 e t = 4.505, p <.05, rispettivamente).
Discussione e Conclusioni
I dati evidenziano l'adeguatezza delle proprietà psicometriche del PQDL in termini di dimensionalità e coerenza interna. I due fattori emersi sono invarianti tra maschi e femmine. Infine, un'elevata abilità di organizzazione della DaD è associata a scarsi livelli di depressione.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

ASSESSMENT AND TESTING PROCEDURES FROM RESEARCH TO CLINICAL PRACTICE

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 155

Cambiamento vs. Conservazione Funzionale nella Sordità Profonda. Quali Evidenze dall'Imaging Cerebrale?

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Lo studio della plasticità corticale nella sordità profonda apre una finestra preziosa sui sorprendenti meccanismi adattivi del cervello umano. Tuttavia, le osservazioni raccolte finora hanno suscitato un vivace dibattito nella comunità scientifica, sollevando interrogativi fondamentali: quale ruolo gioca il fenomeno del reclutamento cross-modale corticale nell'adattamento comportamentale? Il cervello umano possiede capacità pluripotenti di adattamento o sono in atto meccanismi che tendono a preservare la specializzazione corticale tipicamente riscontrata negli individui udenti? Si può dunque interpretare il reclutamento cross-modale corticale come evidenza certa di riorganizzazione corticale?
Alla luce di tali quesiti aperti, la mia presentazione mira a riesaminare le osservazioni più recenti raccolte combinando studi di psicofisica e tecniche di neuroimmagine funzionale e strutturale in individui con sordità profonda. Queste indagini confermano il reclutamento visivo di regioni uditive nella sordità profonda evidenziandone, tuttavia, una marcata selettività funzionale particolarmente evidente in compiti che beneficiano di convergenza multimodale. Tali osservazioni, inoltre, suggeriscono la conservazione sia delle capacità computazionali nelle regioni private dello stimolo sensoriale preferenziale sia della macrostruttura delle vie di connessione tra regioni uditive e visive. Sorprendentemente, anche nelle persone udenti, è possibile osservare risposte a stimoli visivi in regioni uditive, seppure meno marcatamente.
Pur considerando i limiti intrinseci della metodologia adottata in queste ricerche, la selettività funzionale del reclutamento cross-modale e la conservazione anatomo-computazionale sollevano, nel complesso, ulteriori interrogativi sulla natura della plasticità osservata. I risultati dei nostri studi evidenziano, infatti, un contributo sostanziale dell'architettura neurale preesistente, anziché suggerire una riorganizzazione corticale completamente guidata dall'esperienza di deprivazione sensoriale.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Rivalutare la Plasticità Corticale: Intuizioni dalla Deprivazione Sensoriale Congenita

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 334

Study of brain high-order interactions to evaluate therapy effects in migraine patients

Author: Marianna La Rocca[1]

Co-authors: Livio Clemente ; Sebastiano Stramaglia [1]; Marina de Tommaso [1]

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Monoclonal antibodies against calcitonin gene-related peptides (CGRP) such as Galcanezumab (GCA), have revolutionized the therapeutic scenario in migraine. Even though they are clinically effective, how anti-CGRP treatment reduces migraine attacks still remains unclear. We carried out an observational case–control study aimed at studying how the interaction between metabolic and electrical brain connectivity changes after 3 months of treatment with Galcanezumab in order to have a better insight on the GCA action and effects. Network representation is becoming increasingly popular for the description of brain connectivity, however the traditional methods to evaluate network links based on pairwise interaction measures cannot reveal high-order effects involving more than two nodes. High-order interactions are required across brain regions to perform specific functions. These functional interdependencies are described by synergistic information that can be obtained by combining the information from all the sources considered and redundant information that can be provided by any single source. We applied innovative graph theory methods to electroencephalographic (EEG) and functional near infrared spetroscopy (fNIRS) from 20 migraine patients and 10 controls by extending the concept of pairwise connectivity to higher-order interactions. Our results show how two nodes interact in a redundant or synergistic way with the rest of the network in migraine patients before and after 3 month of treatment with GCA giving important information on how GCA makes EEG and fNRIS hyperconnectivity due to migraine revert into normal ranges.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Beyond Neural Connectivity: Exploring Higher Order Interactions in the Brain

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività / 457

Qualità terziarie e "Occhio ricettivo"

Author: Carmelo Calì[1]

[1] *Università di Palermo*

L'introduzione delle qualità terziare o espressive come parti proprie dei fenomeni percettivi è stata considerata elemento distintivo della psicologia della Gestalt. Köhler (1929, 1938), Koffka (1935) e Lewin (1935) hanno sostenuto che siano qualità appartenenti agli aspetti oggettivi dell'ambiente e hanno ipotizzato le condizioni a cui siano rilevabili nell'esperienza quotidiana. Metzger (1941) ne ha definito il significato come "modi di essere"di ciò che si incontra nell'ambiente, connessi con un sottoinsieme di proprietà di "struttura"dei fenomeni. Arnheim (1949) ha esteso la loro funzione alla corrispondenza tra proprietà percepibili e significati astratti e generali delle composizioni artistiche. Tuttavia, già con gli studi di Bonaiuto (1965, 1978) e le esplorazioni di Massironi & Bonaiuto (1966) era emersa l'esigenza di chiarire le proprietà del costrutto di qualità espressive. Sebbene gli oggetti visivi dell'arte programmata e cinetica fornissero una sorta di "prova di esistenza", era necessario stabilire quali elementi fossero connessi alla comparsa e alla manipolazione delle qualità espressive, quale regolarità e variazione potessero ammettere. La chiarificazione di queste proprietà avrebbe permesso di validare la portata predittiva delle qualità espressive, giustificando così la loro introduzione nella ricerca sperimentale.
In linea con la ricerca di Bonaiuto, è interessante chiedersi se (1) le evidenze sulle qualità espressive si possano raccogliere sotto l'ipotesi di un sistema di espressività dell'"occhio ricettivo", analogo alla fisica e alla psicologia ingenue, (2) si possa ammetterne l'estensione dalle preferenze estetiche alla percezione del valore e delle azioni di soggetti biologici e artificiali, (3) se ciò possa comportare una revisione dell'impostazione gestaltista.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Decidere emotivamente: Come le emozioni influenzano giudizi e scelte / 21

Slot Your Emotions: L'influenza delle emozioni nei processi decisionali

Author: Alessandro Quaglieri[1]

Co-authors: Clarissa Cricenti [2]; Emanuela Mari [3]; Pierandrea Mirino [3]; Pierpaolo Zivi

[1] *Facoltà di Scienze della Società e della Comunicazione, Università Mercatorum*

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[3] *Dipartimento di Psicologia, Sapienza Università di Roma*

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Diversi studi sono stati condotti sugli aspetti psicologici del gioco d'azzardo con il fine di comprendere i fattori che contribuiscono allo sviluppo e al mantenimento del gioco patologico. Le risposte alle diverse caratteristiche di gioco, fattori ambientali, lo sviluppo di comorbidità e studi sull'efficacia degli interventi terapeutici sono stati quelli maggiormente studiati. Lo studio dell'interazione tra gli aspetti cognitivi ed emotivi del processo decisionale diviene socialmente rilevante soprattutto quando viene effettuato su popolazioni cliniche che presentano un'alterazione in entrambe le componenti. L'identificazione dei meccanismi di questa relazione contribuisce a una migliore comprensione del modo in cui le persone prendono decisioni in situazioni emotivamente impegnative. Attraverso uno scenario di realtà virtuale, sono stati indagati i correlati comportamentali (scelte rischiose e tempi di decisione) e fisiologici delle quasi-vincite in un campione di controllo. Prima dell' immersione nello scenario, i 59 partecipanti sono stati sottoposti ad una procedura di induzione dell' umore che consisteva nella visualizzazione di un video contenente diversi stimoli in diverse condizioni (i.e., positiva, negativa o neutra). I risultati mostrano che il gruppo con induzione negativa compie scelte più rischiose rispetto al gruppo neutro, le quasi vincite mostrano un pattern di attivazione molto simile a quello delle vincite ed è stato riscontrato un effetto del mood negativo in termini di deattivazione parietale in seguito ad una perdita. Questo studio fornisce nuove prove a supporto dell'utilità degli studi immersivi condotti in realtà virtuale, dell'effetto delle quasi vincite sui comportamenti di gioco e supporta il ruolo cruciale svolto dalle emozioni incidentali sui processi decisionali.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Decidere Emotivamente: Come le Emozioni Influenzano Giudizi e Scelte

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Assessment and testing procedures from research to clinical practice / 91

Reduction and Validation of an Assessment Tool for Caregiver

Burden: Exploratory Graph Analysis and Confirmatory Factor Analysis

Authors: Anna Panzeri[1]; Andrea Spoto[2]; Gioia Bottesi[3]; Giulio Vidotto[1]

[1] *Dipartimento di Psicologia Generale, Università degli Studi di Padova, Italia*

[2] *Dipartimento di Psicologia Generale - Università di Padova*

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Corresponding Author: anna.panzeri@unipd.it

Caregiver burden refers to the multifaceted strain experienced by informal caregivers assisting a loved one suffering from a severe medical condition. Despite the crucial role of this construct in health psychology, one of the most used measurement tools to assess it lacks a full validation.
Indeed, the original study providing the ZBI Italian adaptation only utilized a principal component analysis, and not an exploratory factor analysis, resulting in a 5-factor structure that was never tested with confirmatory factor analysis (CFA).
In a large sample of Italian caregivers, this structure was tested in a CFA model which yielded unacceptable goodness-of-fit indices. Consequently, the sample was divided in two parts. In Study 1, in the first sample an exploratory graph analysis (EGA) –a modern technique from network psychometrics –identified a 3-dimensional solution. However, this solution exhibited problematic cross-loadings and lacked stability across the 10'000 bootstrap replications. Thus, the 5 problematic items with cross-loadings and low stability were removed, and another EGA was estimated on the remaining items. This identified a 3-factor solution with non-problematic network cross-loading and good stability across bootstrap replications.
In Study 2, the factorial structure resulting from the EGA was then specified in a CFA model, which provided good fit indices (after correlating the residuals of two semantically correlated items within the same dimension).
The integration of both modern and traditional techniques in psychological assessment enabled the validation of a psychometrically sound assessment tool, with useful implications for clinical and research purposes.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

"Procedure di assessment e testing dalla ricerca di base alla pratica clinica"- Simposio della Prof. Monica Mazza

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 413

Una storia sublime: studio dell'evoluzione di un concetto emotivo e delle sue implicazioni per la ricerca sperimentale

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L'emozione complessa del sublime ha affascinato studiosi di tutte le epoche, andando a intercettare, recentemente, anche l'interesse della psicologia sperimentale. Secondo questa branca della psicologia, oggi, il termine "sublime"sarebbe assimilabile a quello di awe che tradurremmo in italiano con "profonda meraviglia", comportando non poche implicazioni nell'ambito del suo studio empirico.

Dunque, diviene sempre più impellente comprendere l'evoluzione storico-culturale di questo termine, la quale ne influenza l'operazionalizzazione, soprattutto in paesi non anglosassoni, laddove il singolo termine emotivo (single item) potrebbe risultare essere psicometricamente debole per approdare a una misurazione esaustiva (e valida) di tale fenomeno. In questo contributo, traccerò l' evoluzione del termine "profonda meraviglia", a partire da quello del sublime, indicherò alcune delle evidenze più recenti che hanno messo a confronto, sperimentalmente e psicometricamente, questi due fenomeni, provando a evidenziarne le implicazioni a livello sperimentale. Nello specifico, si evidenzieranno le conseguenze a livello concettuale e metodologico, le quali possono caratterizzare, in modo più esteso, lo studio di tutti i fenomeni emotivi complessi.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Misurare spazio e tempo nella memoria e nelle emozioni

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività / 458

Fenomenologia dell'esperienza cinematografica

Author: Pierluigi Cordellieri[1]

[1] *Sapienza Università di Roma*

I principali aspetti psicologici dell'esperienza cinematografica, dal movimento all'elaborazione delle diverse sequenze filmiche fino alle strategie per ottenere illusioni di ambienti, hanno rappresentato argomenti approfonditi nelle meritorie attività di ricerca coordinate dal Prof. Paolo Bonaiuto. La mia collaborazione con il Prof. Bonaiuto, in particolare su tali argomenti, è iniziata alla fine degli anni '90 e si è protratta fino alla prima decade del 2000, sostanzialmente fino al suo ritiro dal mondo accademico.
L'evoluzione del linguaggio cinematografico e della sua grammatica hanno fornito costanti spunti di confronto con il patrimonio scientifico della psicologia (Angelini, 1992). La prima grande opera che ha indagato i processi cognitivi correlati all'esperienza cinematografica è stata quella di Münsterberg (1916). Numerose analisi sulle condizioni percettivo-strutturali del film sono state condotte nel tempo, principalmente legate alle impostazioni della psicologia della Gestalt (Wallon, 1953, 1960; Rey, 1954), all'approccio ecologico e alla psicologia cognitiva (Gibson, 1979; Hochberg, Brooks, 1978). Nei circa quindici anni di appassionata collaborazione con il Prof. Bonaiuto, è stato possibile indagare aspetti come l'illusione di realtà evocata dall'esperienza cinematografica (Morin, 1962; Romano, 1965), con la possibilità di rappresentare differenti livelli di realtà fenomeniche (l'onirico, il fantastico, lo storico, ecc.) e le rappresentazioni di ambienti (Bonaiuto, Giannini & Bonaiuto, 1990). Il Prof. Bonaiuto ha coordinato ricerche innovative anche sugli aspetti psicologici del linguaggio cinematografico, come la "collocazione apparente dell'osservatore"immerso nella realtà filmica, che determina i vincoli per la macchina da presa, e i "processi di completamento"attivi nell'osservatore, che sostanziano il montaggio cinematografico.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 143

Oltre il dibattito scientifico: usi e abusi del concetto di plasticità crossmodale nelle pratiche cliniche

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I risultati delle ricerche di neuroscienze cognitive non si fermano dentro i laboratori, i dibattiti scientifici e le riviste di settore. Si diffondono attraverso comunicati stampa, i media e i social network, arrivando a influenzare pratiche cliniche e politiche sociali. In questo percorso, potenzialmente virtuoso, la complessità di alcuni risultati sperimentali rischia di perdersi. Le nozioni teoriche sul funzionamento di mente e cervello possono diventare scorciatoie di pensiero, usate per sostenere posizioni più ideologiche che scientifiche. Il tema della plasticità crossmodale è un esempio paradigmatico di come la complessità legata a questo argomento di ricerca sia stata spesso ignorata, anche per effetto di una involontaria complicità di affermazioni speculative proposte negli articoli scientifici stessi. In questa relazione affronterò questo argomento nell'ottica del dibattito fra plasticità e rigidità del cervello nei contesti di privazione sensoriale, facendo riferimento a come la letteratura sulla plasticità crossmodale nelle persone sorde abbia influenzato le indicazioni cliniche proposte a coloro che hanno vissuto la riafferentazione acustica grazie all'impianto cocleare. Per quasi due decenni l'idea che le aree acustiche del cervello potessero modificare la loro funzionalità per rispondere a stimoli visivi è stata sinonimo di "maladattività", ed è stata usata per sostenere l'incompatibilità fra impianto cocleare e esperienze linguistiche visive (lettura labiale e lingua dei segni). Viceversa, la prospettiva di una preservazione funzionale può orientare le indicazioni cliniche verso una descrizione più "adattiva"della plasticità crossmodale, e verso l'idea di usare dispositivi di sostituzione sensoriale, prima e dopo l'impianto, per favorire processi di apprendimento nella modalità acustica.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Rivalutare la Plasticità Corticale: Intuizioni dalla Deprivazione Sensoriale Congenita

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Decidere emotivamente: Come le emozioni influenzano giudizi e scelte / 20

Betting on Your Feelings: l'interazione tra emozioni e cognizioni nel "Gambling Affective Task"

Author: Emanuela Mari[1]

Co-authors: Clarissa Cricenti [2]; Anna Maria Giannini [1]; Alessandro Quaglieri [3]

[1] *Dipartimento di Psicologia, Sapienza Università di Roma*

[2] *Sapienza, Università di Roma*

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Il Disturbo da Gioco d'Azzardo (DGA) è una condizione complessa influenzata da diversi fattori dati dall'interazione di fattori clinici, cognitivi ed emotivi. L'impulsività, una variabile cruciale nello

studio delle dipendenze, è strettamente legata alle distorsioni cognitive nel DGA, includendo scelte impulsive, risposte motorie, presa di decisione e bias cognitivi. Inoltre, le emozioni, l'umore e lo stato affettivo giocano un ruolo cruciale nello sviluppo e nel mantenimento della patologia, specialmente quando il gioco d'azzardo è utilizzato come strategia disadattiva per evitare o sfuggire dai problemi e dallo stress. Questo studio indaga le differenze nella presa di decisione e di regolazione emotiva in individui con DGA, cosiddetti "puri", giocatori in comorbidità con le sostanze e gruppo di controllo; lo studio propone anche un nuovo task sperimentale, il "Gambling Affective Task"per indagare il ruolo di un priming affettivo sulla presa di decisione.
I risultati mostrano che i partecipanti hanno scommesso importi minori dopo un priming positivo. Inoltre, confrontando i risultati dei gruppi, i soggetti in comorbidità hanno scommesso importi più elevati rispetto al gruppo di controllo, indipendentemente dal tipo di priming. I partecipanti hanno mostrato tempi di risposta più lunghi nei trial preceduti da un priming positivo, rispetto a priming negativi e neutri. Questi risultati potrebbero suggerire che le emozioni positive possano agire come fattore protettivo, poiché allungano e ritardano i comportamenti legati al gioco d'azzardo. Confrontare i giocatori con e senza comorbidità da sostanze può far luce su fattori esclusivi nella dipendenza da gioco e migliorare la comprensione del fenomeno.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Decidere Emotivamente: Come le Emozioni Influenzano Giudizi e Scelte

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività / 455

Completamento amodale e profondità visiva

Author: Walter Gerbino[1]

[1] *Università di Trieste*

Nel loro classico saggio Michotte, Thinés e Crabbè (1964) proponevano di estendere la nozione di completamento amodale alla strutturazione dello spazio percettivo, in particolare alla distanza tra gli oggetti, lamentando al tempo stesso l'assenza di ricerche riconducibili a tale approccio. Nonostante il rinnovato interesse verso il completamento amodale (van Lier & Gerbino, 2015; Gerbino, 2020; Spence & Di Stefano, 2024) non è chiaro se, e in quale misura, la proposta di Michotte et al. sia stata recepita e si sia dimostrata fruttuosa. Un fenomeno apparentemente coerente con tale proposta è l'illusione della barra-nella-scatola (Gerbino & Fantoni, 2007), spiegabile con la tendenza a minimizzare la profondità delle superfici, osservabile soprattutto nella percezione pittorica. Quali altri fenomeni, oltre a questa applicazione del principio di minimo, potrebbero indicare che la struttura dello spazio percepito è sostanzialmente amodale, come sembrano suggerire Michotte et al.?

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Simposio in onore di Paolo Bonaiuto: percezione, arte, espressività

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No

Symposia: Decidere emotivamente: Come le emozioni influenzano giudizi e scelte / 485

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General discussion

Corresponding Author: roberto.bottini@unitn.it

Lunch & poster 1 / 113

Intersecting Identities: Gender and Bilingualism in Shaping Conflict Management Styles

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Conflict is an inevitable aspect of human life, and the manner in which it is managed critically influences the outcomes of such situations. Extensive research has demonstrated that culture, personality, and situational factors shape individuals' preferences for conflict management styles. Despite the fact that women constitute 50% of the global population and 60% of individuals are bilingual or multilingual, scant research has explored how these two demographics influence conflict management styles and their interaction. To address this gap, we validated and updated the Rahim Organizational Conflict Inventory-II at a mid-sized U.S. university and subsequently administered it to 390 American participants via Prolific. The sample size was determined a priori based on a pilot study. Our main analyses included a MANOVA to assess overall preferences for conflict management styles and linear regressions to examine differences in specific styles. The findings reveal that gender significantly impacts conflict management preferences, with males showing a higher preference for a dominating style and a lower preference for avoiding conflicts than females. Notably, the gender disparity in the avoiding management style was less pronounced among bilinguals compared to monolinguals. These results provide new insights into the complex interplay between gender, bilingualism, and conflict resolution. Understanding these differences can enhance awareness and facilitate the reduction of tension in interpersonal communications. Future research should investigate these phenomena in different national contexts and extend the findings to multilingual populations.

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No

Lunch & poster 1 / 9

Effects of anticipating regret on pro-environmental behavior

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Psychological research has focused on developing a deeper theoretical and practical understanding of the best intervention strategies to support eco-friendly behaviours, attitudes, and practices. It has been noted that the anticipation of regret is a strong inducement to act. The overall goal is to encourage young individuals to make eco-friendly decisions by manipulating their regrets. For ten days, one EkoTok (short video) will be sent every day via an automated instant messaging chat. One-hundred-twenty-eight participants were recruited for the research. Following baseline measurements of environmental behaviour (total and subdimensions), individuals were split into two groups. The experimental group (GS)received EkoToks characterized by the manipulation of regret anticipations.The control group (GC) received only informative movies. Environmental behaviour measurements were gathered once more at the post-test and follow-up, which took place three months later. The interaction between the means of the two groups during the three measurement times was seen on: Total score ($F= 25.9; p<0.01$), Prosocial Behaviour ($F= 8.7; p<0.01$), Waste ($F= 9.9; p<0.01$), Reuse ($F= 30.8; p<0.01$), Recycling ($F= 15.9; p<0.01$), and Activism ($F= 29.6; p<0.01$). At the post-test, GS has higher scores than GC on the Total score ($F= 4.7; p<0.05$), Prosocial Behaviour ($F= 4.1; p<0.05$), Consumption ($F= 8.8; p<0.01$) and Recycling ($F= 11.5; p<0.01$). Comparing the outcomes between post - test and follow-up, GS presents higher scores than GC on Total score ($F= 22.6; p<0.01$), Prosocial Behaviour ($F= 4.2; p<0.01$), Consumption ($F= 9.5; p<0.01$), Reuse ($F= 5.4; p<0.01$), Recycling ($F= 20.5; p<0.01$) and Activism ($F= 29; p<0.01$).The study's findings provide the scientific foundation for an intervention aimed to encourage eco-sustainable behaviour.

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Lunch & poster 1 / 135

The influence of spatial frequencies, orientation and familiarity on the integration of face stimuli

Authors: Giovanni Federico[1]; Maria Cuomo[1]; Alessio Fracasso[2]; Antimo Buonocore[1]

[1] *Università degli Studi Suor Orsola Benincasa*

[2] *University of Glasgow*

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When we observe an object, our visual system identifies its general shape and adds specific details to form a coherent representation. This coarse-to-fine approach involves quick processing of low spatial frequency content (LSF) to generate a basic template, which aids the integration of the more detailed high spatial frequency information (HSF). In three experiments, we explored how LSF and HSF are integrated, leveraging on the face inversion effect, whereby inverted faces are more difficult

to recognize than upright ones. In Experiment 1, eight participants determined the gender of unfamiliar faces with different orientation. Results showed that identification accuracy for HSF faces was lower than LSF or unfiltered faces. In Experiment 2, fourteen participants matched two familiar faces displayed in succession. The template and the sample shared either the same SF (congruent) or had complementary SF (incongruent). In congruent conditions, HSF templates tend to be better than LSF templates. However, in the incongruent conditions mapping a LSF sample on an HSF template was more effective only for upright faces. In Experiment 3, six participants performed the same task but with unfamiliar faces. The overall accuracy was better for congruent than incongruent conditions, and it was not dependent on template's SF. According to the coarse-to-fine model, LSF content provides a template to integrate HSF information. However, our results challenge this view, suggesting instead a flexible encoding of SF information, depending on task and image contingencies.

Figures

Experiment-1:Unfamiliar-faces:gender-discrimination-task

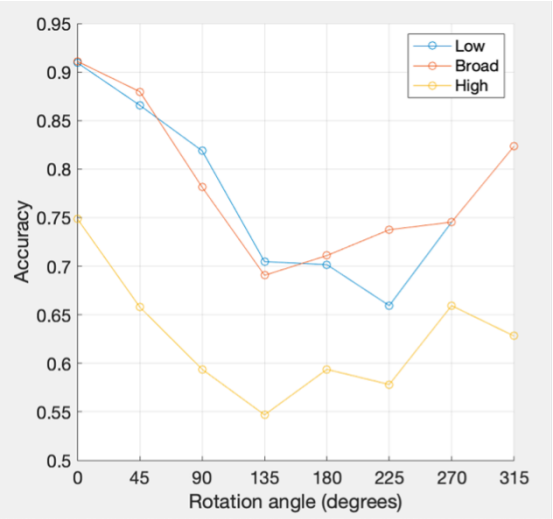

Figure 1: EXP1

Experiment-2:Familiar-faces:match-to-sample-task

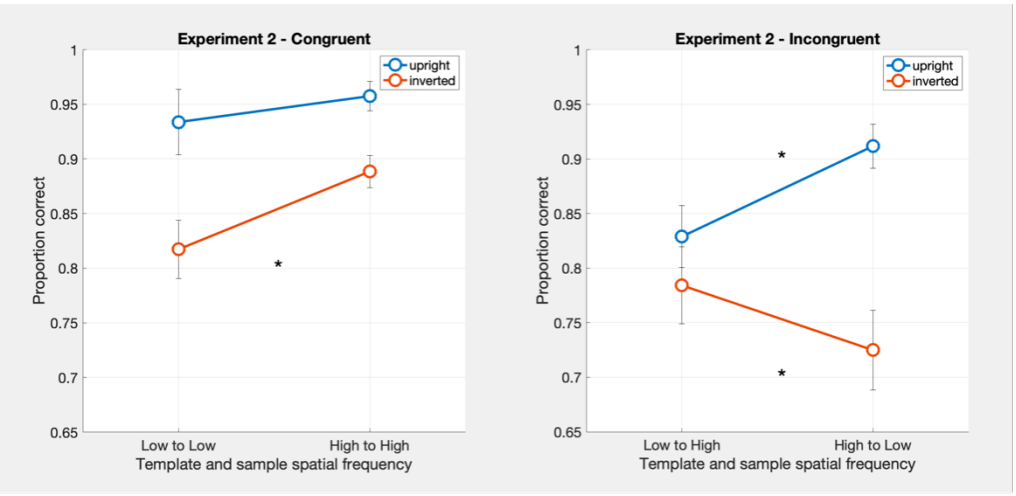

Figure 2: EXP2

Experiment-3:Familiar-vs-Unfamiliar-faces:match-to-sample task

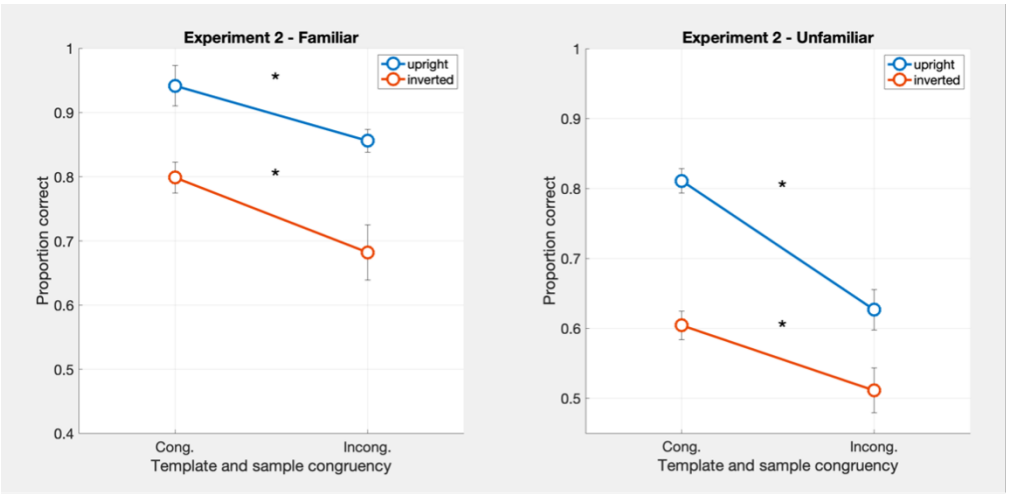

Figure 3: EXP3

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Lunch & poster 1 / 136

Exploring the interplay between rhythm complexity, musical pleasure, and musical hedonia in shaping rhythm perceptual abilities

Authors: Eleonora Fullone[1]; Giorgio Lazzari[2]; Laura Ferreri[2]; Carlotta Lega[2]

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Corresponding Author: eleonora.fullone@iusspavia.it

Research consistently shows that rhythm complexity elicits pleasurable responses to music, with medium complexity rhythms eliciting the highest levels of pleasure and wanting to move. However, whether it predicts rhythmic skills and its association with musical pleasure and musical hedonia remains unexplored. So, in Experiment 1, we first quantified the pulse entropy of realistic musical excerpts as a measure of rhythmic complexity, while participants (N=102) rated the pleasure and the wanting to move of these excerpts . Moreover, we explored participants'sensitivity to musical reward (i.e., musical hedonia) with the extended Barcelona Music Reward Questionnaire (eBMRQ). Results showed an inverted U-shaped relationship between pleasure and wanting to move ratings and pulse entropy, especially in participants with higher musical hedonia levels. In Experiment 2, participants (N=210, independent sample re-analysis) completed a Beat Alignment Test (BAT) in which they have to detect misalignments between a superimposed metronome and realistic musical excerpts (the same of Experiment 1) and completed the eBMRQ questionnaire. Results showed that medium pulse entropy (i.e., medium complexity) tracks were perceived as more rhythmically aligned, suggesting that rhythm complexity predicts rhythmic skills. Additionally, higher scores on

the eBMRQ questionnaire correlated with better rhythm perception, linking musical hedonia with rhythmic abilities. Overall, our results underscore the complex relationship among intrinsic properties of stimuli, such as pulse entropy, individual reward sensitivity, and musical pleasure, and how all together intertwine to shape rhythmic perception abilities.

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No

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Lunch & poster 1 / 124

Scototaxis response in fish: an interspecific study on the role of body colour and sociability.

Authors: Alberto Mair[None]; Elena Aleotti[None]

Co-authors: Alessandra Pecunioso ; Alessio Tiberi ; Christian Agrillo ; Denisa Pitea ; Maria Guigues

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Scototaxis test is an anxiety-like test used by behavioural neuroscientists consisting in the assessment of dark/light preference of laboratory animals. Most of the fish species have been shown to express a preference for the dark environment. However, the majority of the investigated species has a dark body colour, thus making a clear contrast with a white/bright background. Also, while in nature fish tend to be highly social, studies in the scototaxis literature tested single fish. Individual vs. group behaviour might interact with scototaxis response. In experiment 1, we assessed the individual response to test the hypothesis that the different colours of the body might modulate the dark/light preference. We found that species with a dark body colour (Hyphessobrycon megalopterus) and a largely transparent body colour (Kryptopterus bicirrhis) strongly preferred the darker environment. Instead, the preference for darkness of a species with a luminescent part of the body (Cheirodon axelrodi) was less pronounced. Lastly, a species with a white body colour (Corydoras albini) did not prefer either a bright or a dark sector. In experiment 2, we observed the same species, but subjects were simultaneously inserted in the test tank (shoals of 20 individuals). While H. megalopterus and K. bichirrhis confirmed their robust preference for darker environments, the other two species modified their preference and selected preferentially the white compartment. These results, taken together, indicate that scototaxis response is context-dependent, as it appears to be modulated by the body colour and the presence/absence of other conspecifics in the surrounding.

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Lunch & poster 1 / 69

L'atteggiamento verso l'e-mobility: l'utilizzo di brevi messaggi informativi per migliorare gli atteggiamenti verso i veicoli elettrici

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La transizione dai tradizionali veicoli a combustione ai veicoli elettrici (VE) è essenziale per raggiungere gli obiettivi di decarbonizzazione e cercare di fronteggiare il surriscaldamento globale. Ci sono vari ostacoli che frenano tale transizione, di cui molti di natura psicologica. Particolarmente noto è il problema del range anxiety, cioè il timore di rimanere senza carica durante gli spostamenti. Questo, assieme ad altri fattori che rendono le persone scettiche all'idea di adottare un veicolo elettrico, sono basati sulla disinformazione o su conoscenze obsolete. Infatti, gli individui spesso non sono consapevoli dei più attuali progressi che la tecnologia ha fatto nel migliorare, ad esempio, i tempi di percorrenza, la velocità di ricarica ed il recupero delle batterie. In questo studio, in collaborazione con l'azienda Maserati, abbiamo identificato 12 false credenze che molte persone hanno verso i VE ed abbiamo elaborato una serie di brevi messaggi informativi atti a contrastare ognuna di esse. I partecipanti erano studenti universitari ed hanno compilato un questionario, progettato per misurare gli atteggiamenti verso i VE, prima e dopo aver visionato la serie di messaggi informativi. I risultati mostrano un significativo miglioramento in gran parte delle dimensioni prese in considerazione nello studio (e.g., ambientale, impatto sociale), tuttavia non emerge un significativo impatto diretto sulla propensione all'acquisto per sé stessi, mentre migliora l'intenzione a suggerire l'acquisto ad un famigliare o un amico.

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DISENTANGLING NEURAL CORRELATES AND CONSEQUENCES OF VISUAL AWARENESS THROUGH ICONIC MEMORY: AN EEG STUDY

Author: Davide Bonfanti[1]

Co-authors: Sonia Mele [1]; Chiara Mazzi [2]; Silvia Savazzi [1]; Elena Bertacco

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A widespread problem in studying the neural correlates of visual consciousness is the difficulty in disentangling the actual correlates of the visual experience from the neural consequences of such percepts. This study aims to elucidate the electrophysiological dynamics underlying visual experiences' consequences. To do so, a partial report paradigm was used to separate activity related to the conscious experience from that correlating with reporting.
Preliminary data has been collected from 5 participants. Stimuli consisted of six letters lasting 100 ms, circularly spread around a fixation cross, three on the left and three on the right. A specific acoustic tone immediately following the stimulus indicated if participants had to report the left or right letters. Participants had to report the correct side of the stimulus while the EEG was being recorded.
Preliminary results show that early ERP sensory components have similar amplitude across the two conditions (Report Right vs. Report Left). This is also true for the N200 component, often considered a visual awareness marker. P300, on the other hand, reaches a higher amplitude on the electrodes ipsilateral to the letters to report –i.e., left parietal electrodes show a more ample P300 in the Report

Left condition.
The EEG components elicited by our partial report paradigm are comparable until the N200 across the two conditions, meaning that all the presented letters are available to consciousness. P300 differs between the two conditions, with a higher amplitude possibly reflecting an inhibitory mechanism for non-target letters, thus reflecting post-consciousness processes.

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Lunch & poster 1 / 104

Gender bias during a face decision task: when a face can be a MAESTRA but not a PRESIDENT

Authors: Laura Casalino[1]; Giacomo Pigani[1]; Eduardo Navarrete[1]

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Gender bias is pervasive in many aspects of our lives: women experience more difficulties than men in the job market. Here, we tested a linguistic strategy to mitigate gender bias in professional contexts in Italian.
Four versions of 20 faces were created, varying along a continuum from masculinity (1) to femininity (7) using FaceGenArtistPro3 (Values:1,3,5,7). Participants saw two versions of the same identity-face along with a word and were required to decide which face matched the word better. The experimental pairs contained the two extreme values (1 and 7) or middle values (3 and 5). In Experiment 1, professions typically associated with males (*presidente*, *ingegnere*) or females (*badante*, *estetista*) were shown. Participants more often chose the faces with feminine value (5 and 7) with professions associated with females than with those associated with males. Interestingly, faster RTs were observed when the decision confirmed the gender bias (choosing 5 and 7 for *badante* and *estetista* compared to *presidente* and *ingegnere*). This pattern suggests a gender bias in decision-making and RTs. Experiment 2 was identical except that the professions were gender-marked nouns (male bias: *sindaco*, *sindaca*; female bias: *maestro*, *maestra*). No gender bias was reported in Experiment 2, participants selected faces with feminine value (5 and 7) with *sindaca* and *maestra*, and faces with male values (1 and 3) with *sindaco* and *maestro*.
This study offers a new test to identify gender bias in decision-making and RTs. In addition, we demonstrated that by using gender-marked nouns the gender bias can be eliminated.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Lunch & poster 1 / 10

Il ricordo flashbulb del primo caso COVID-19 e l'impatto dell' emergenza pandemica. Uno studio cross-nazionale.

Author: Tiziana Lanciano[1]

Co-authors: Federica Alfeo [1]; Antonietta Curci [1]; Claudia Marin [1]; Angela Maria D'Uggento [1]; Diletta Decarolis [2]

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I ricordi fotografici (Flashbulb Memories, FBMs) sono ricordi autobiografici vividi e dettagliati del contesto di apprendimento di un evento pubblico, inaspettato, importante e ad alto impatto emotivo. Uno studio cross-nazionale condotto su 11 Paesi nel mondo (N= 2306), ha indagato la formazione di un ricordo flashbulb per la notizia del primo caso COVID-19 nel proprio Paese, e ha testato l' effetto dell'emergenza pandemica. I partecipanti hanno mostrato un ricordo altamente dettagliato della data e degli altri presenti al momento della ricezione della notizia, e un ricordo parzialmente dettagliato del luogo, dell'attività in corso di svolgimento e della fonte della notizia. La Cina è il Paese che ha mostrato la più alta specificità FBM. Tutti i Paesi hanno considerato l'emergenza COVID-19 come grave, importante e significativa sia a livello individuale che globale. L'analisi CART (Classification and Regression Tree Analysis) ha rivelato che la specificità FBM è influenzata dall'età dei partecipanti, dalla gravità soggettiva percepita dell'emergenza, dall'aspettative di conseguenze pandemiche e dal vivere in zone con alte misure protettive e restrittive da COVID-19. I modelli di regressione gerarchica hanno restituito il ruolo di fattori emotivi e cognitivi - gravità percepita, aspettativa dell'impatto pandemico, reiterazione della notizia –sulla formazione di ricordi flashbulb dettagliati e specifici nei diversi Paesi coinvolti.

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No

Lunch & poster 1 / 52

Attentional processes in Parkinson's disease: a systematic review

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Co-author: Ilaria Corbo [1]

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Parkinson's disease (PD) is typically known as a neurodegenerative disorder affecting motor skills. It is characterized by the loss of dopamine-producing neurons in the substantia nigra and subsequent accumulation of Lewy bodies in the residual neurons. Although cognitive impairments are a significant aspect of PD, there has been limited investigation and analysis of these changes. This is despite the fact that they represent a highly disabling aspect for patients who experience them daily. In particular, attentional deficits and vigilance deficits appear to be significant determinants of the patient's quality of life. Therefore, the present systematic review aims to examine studies that have assessed the difference in these aspects, using several attentional tests, between subjects with PD and healthy controls (HC). The systematic review was conducted in accordance with the PRISMA Statement method and 25 studies were included. The results indicate that individuals with Parkinson's disease (PD) exhibit mainly deficits in sustained attention, inhibitory control of distractors,

identified as top-down deficits, and a general slowdown in reaction times. It has not been possible to identify the role played by dopaminergic therapy on attentional performance due to a paucity of studies comparing medicalized and non-medicalized patients. However, it is believed that an attention disorder may depend on alterations in dopaminergic circuits.
In light of these data, further studies should be conducted in order to gather more evidence on attentional functioning in Parkinson's and to better understand any influence of dopaminergic therapy.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

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Lunch & poster 1 / 131

Exploiting a P300-BCI speller for language skills potentiation

Authors: Andrea Caria[None]; Claudio Mulatti[None]; Giulia Mussetti[None]; Lorenzo Marin[None]

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An extensive literature demonstrated that non-invasive Brain-Computer Interfaces (BCI) through overt and covert manipulation of specific brain signals enable alternative ways of communication in highly disabled individuals with neurodegenerative disorders. In particular, EEG-BCI spellers allow patients with severe loss of motor control and language abilities to by-pass the dysfunctional neuromuscular pathways and to exploit an effective route replacement for verbal communication (Rezeika et al. 2018). Moreover, recent studies demonstrated that an auditory BCI, besides supporting language communication, can boost language skills in aphasic patients with language production and comprehension impairment after stroke (Kleih et al. 2016, Musso et al. 2022). Building on this evidence, we envisaged the exploitation of a standard "row and column"BCI (Farwell & Donchin 1988) for enhancing language abilities in both normal readers and individuals with dyslexia. We here hypothesized that an extensive use of a visual P300-BCI speller would strength visuo-linguistic and visuospatial attentional processes concurrently leading to reading improvement. We first tested our hypothesis on normal readers (BCI-L) that underwent a 4-days training with a visual EEG-BCI speller and a pre-/post-BCI reading task, in relation to 2 control groups, one undergoing a BCI training with a non-linguistic visual interface (BCI-NL), and one undergoing pre-/post reading task only (no-BCI). Language skills were assessed through a pseudo-words reading task based on the Reicher-Wheeler paradigm. Our preliminary results indicate a reduction of RT and increase of accuracy in the pseudo-words reading task in both BCI-L and no-BCI groups, but the effects appear larger in the BCI-L group.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium talk, what's the symposium title?:

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No

Lunch & poster 1 / 172

I costrutti personali e la loro relazione con la Teoria della Mente nell'invecchiamento

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Co-author: Elena Cavallini [1]

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Le relazioni rivestono un ruolo di fondamentale importanza per il benessere psicofisico della persona, specialmente nell'anziano. Durante le interazioni sociali entrano in gioco diverse abilità, fra cui la Teoria della Mente (ToM) che permette di interpretare i propri e altrui stati mentali (pensieri, emozioni, desideri). Tale abilità è particolarmente utile nel predire i comportamenti degli altri e sembra essere legata, almeno in parte, al funzionamento esecutivo. Tuttavia nell'anticipare le azioni facciamo ricorso anche a esperienze pregresse e quindi a schemi mentali. Nessuno studio ad oggi ha analizzato l'associazione fra questi e la ToM.

L'obiettivo del presente studio è quello di analizzare la relazione fra schemi mentali, utilizzando l' approccio dei costrutti personali, e la Tom in giovani e anziani. Una minore complessità di costrutti potrebbe infatti contribuire a spiegare le difficoltà degli anziani nei processi di mentalizzazione.

Allo studio hanno partecipato 30 giovani adulti (di età compresa tra i 20-30 anni) e 30 anziani (con un'età superiore ai 65 anni), ai quali sono state somministrate due prove di Tom e un adattamento della griglia dei costrutti personali di Kelly.

I risultati mostrano differenze significative nei costrutti personali, gli anziani riportano infatti una minore complessità degli stessi, e un calo nella Tom all'avanzare dell'età. Dalle analisi preliminari emergono inoltre interessanti associazioni fra i costrutti personali e le abilità di mentalizzazione. Ulteriori analisi consentiranno di verificare se i cambiamenti negli schemi mentali siano responsabili delle minori abilità di mentalizzazione osservate nel campione di anziani.

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Skin temperature changes in response to body ownership modulation through mirror-box illusion: a preliminary EEG study

Authors: Irene Gorrino[1]; Francesco Crottini[2]; Gabriella Bottini[2]; Gerardo Salvato[2]; Giulia Mattavelli[3]

[1] *ICoN Center, Scuola Universitaria Superiore IUSS, Pavia*

[2] *Department of Brain and Behavioral Sciences, University of Pavia, Pavia*

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Recent studies have revealed intriguing links between experimental manipulation of body ownership and changes in autonomic responses, including skin temperature changes. However, the mechanisms underlying this interaction remain unclear.
The aim of the present study is to investigate the electroencephalographic correlates of body ownership manipulation and skin temperature changes.

The Mirror Box Illusion (MBI) was applied to manipulate the sense of ownership of upper limbs, while 64-channel EEG was continuously recorded and skin temperature was measured before and after the MBI with a thermal imaging camera, along with assessments of explicit ownership judgments and proprioceptive drift.
The results showed that hands temperature significantly decreased after the synchronous compared with the asynchronous condition.
Moreover, comparison of proprioceptive drift showed a significant difference indicating a larger left-hand position displacement towards the mirror on the right in the synchronous condition compared with the asynchronous condition.
Cortical responses were analysed using cluster-based tests, and Independent Components Analysis (ICA) was used to investigate EEG-derived brain sources. Preliminary results revealed different modulations at 300 -500 ms time range between synchronous and asynchronous conditions in left and right motor cortex.
These findings not only contribute to our understanding of how changes in body perception can influence physiological responses, but also highlight the importance of multisensory integration in shaping our sense of embodiment and provide valuable insights into the underlying neurobiological mechanisms, thus opening avenues for further research in neuroscience and cognition.

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Lunch & poster 1 / 153

"Dynamical Accommodation of Overt Attention, Accuracy and Time in Modern Pentathlon Athletes during Laser Run Shooting"

Authors: Dalila Sciarra[None]; Tommaso Palombi[None]; FEDERICA GALLI[None]; ALESSANDRA DE MARIA[None]; DARIO FEGATELLI[None]; Moreno Coco[None]; Fabio Lucidi[1]

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Many sports require athletes to dynamically control their visual attention to achieve optimal performance, especially when under time-pressure. In this real-world eye-tracking study, we uncover the interplay between attention and performance in 11 Modern Pentathlon elite athletes of the Italian National Team during "Laser Run", which involves five blocks of shootings, each consisting of four series. In each series, athletes must score five valid shots and after that, in real competitions, they perform a run, which forces them to trade-off accuracy (how well they hit the target) and time (how fast they shoot). Fixations acquired with a Tobii Pro Glasses 2 were time-locked to each critical shoot (when the trigger was pulled) and considered only if occurring within a single or spanning across multiple shoots. We found that higher accuracy and longer fixations increase the time to complete a shoot. However, athletes learn to dynamically adjust this trade-off between attention and accuracy across the shooting blocks, so significantly reducing their overall timings too. Our results challenge the belief that fixation duration prior to a critical movement is predictive of performance (e.g., the quiet eye concept) and posit that attention needs to dynamically accommodate motor-actions in time-limited sport activities.

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Children's Trust Learns to Adapt: Social Inconsistencies Shape First Impressions

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Faces influence our initial trust decisions but sometimes can be deceiving. Young children can form trust impressions from faces and use them to guide their decisions in economic trust games (Ewing et al., 2015). Older children can also consider the fairness of partners' return behavior when making trust decisions (Siddique et al., 2022). Here, we explored how 5-7-year-olds adjust their trust behavior based on social experience.
Children (N=80) played a web-based child-friendly online trust game, collecting as many gems as possible along a journey where they met trustworthy- or untrustworthy-looking fairies. The fairies could act fairly or unfairly (congruently or incongruently with their facial appearance), multiplying or keeping the gems the child would offer them. Children's spontaneous sharing behavior with novel fairies'faces was monitored before and after their exposure to the fairies'return behavior to assess generalization to new social partners.
Data collection is still in progress. Preliminary results confirmed that children's sharing behavior was biased by facial trustworthiness, but this changed based on the fairies'actions. Children shared more with fair fairies and less with unfair ones (Time x Face trust x Congruency, $p < .001$). Notably, this effect showed a tendency to generalize to new faces, which, if confirmed in the final sample, would suggest children learned to adjust trust based on experience (Face trust x Congruency, $p = .11$).
These findings highlight the flexibility of children's trust formation. They can adapt their initial impressions based on social interactions, potentially beneficial in situations where appearances might be misleading.

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Perinatal influences on threat-cues processing in decision-making

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The perinatal period (conception to first year) brings about psychological changes in mothers, including heightened vulnerability to potential threats, especially during pregnancy (e.g., Brygger Venø et al., 2021). When competing for resources, people are also sensitive to cues of threat, with physically weaker individuals tending to concede more resources to those who appear more (vs less) threatening (Geniole et al., 2017). However, no studies have explored if such threat-sensitivity is exaggerated during this perinatal period.
We investigated this question in 86 pregnant women, tested in late pregnancy (29 weeks gestation) and one month postpartum, and a control group of 53 non-pregnant women, tested twice with a two-months gap. All participants played a web-based, competitively-framed ultimatum game against partners displaying high- or low-threat faces. Afterward, they rated the perceived threat of these faces.
The results of robust multilevel modelling revealed a clear interaction between pregnancy and time ($p = .002$): before giving birth, pregnant women ceded fewer resources than non-pregnant women, regardless of the partner's threat level. Additionally, a marginal perinatal x threat effect ($p = .053$) revealed that non-pregnant women exhibited the expected threat premium effect (more concessions to high-threat faces, $p = .01$), but pregnant and post-partum women did not ($p = .93$).
These findings suggest that pregnancy may affect social and economic decision-making by reducing (rather than increasing) submissiveness to threat when competing over resources.

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Lunch & poster 1 / 185

Neuropsychological and emotional-behavioral changes in children's development after COVID-19

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Objectives: Sars-Cov-2 infection had a significant impact on the psychological well-being of children and led to negative effects on their mental health. Although children affected by COVID-19 had milder symptoms compared to adults, impairments in neuropsychological and emotional development were noted.
The main aim of this study was to detect possible changes in the neuropsychological and emotional-behavioral development of children after Sars-Cov-2 infection.
Methods: 40 patients aged 8 to 9 years were divided into two groups: children who had contracted SARS-Cov-2 infection (CG) and children who had not contracted infection (NCG). The BVN 5–11 instrument was used to assess cognitive domains. Data on changes in emotional-behavioral development were collected through a parent questionnaire.
Results: The Wilcoxon signed-rank test revealed a significant change in mood only in the CG participants ($p= 0.019$). The neuropsychological performance of the two groups on BVN 5-11 sub-items was below the cutoff of clinical significance.

Significant positive correlations were observed between Naming on visual presentation and Reading time (p=.006), and Phonemic fluency and device use time (p=.030). Positive statistically significant correlations were also found between Mood and Free behavior (p=.000) and between Mood and peer Interaction (p= .013).
Conclusions: Sars-Cov-2 infection had a negative impact on the emotional development of children who were infected with the virus. The neuropsychological functioning of the pediatric population was influenced by psychosocial variables that played a protective role in children's cognitive development.

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Lunch & poster 1 / 22

Promoting geropsychology. A memorandum for research, policies, education programs, and practice for healthy aging

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The aim of this viewpoint paper is to synthetically report the state of the art at a global level on research, practice and assessment, policies, and training in clinical psychology of aging and more specifically in geropsychology. The main sources of information were: 1) the most recent reviews of the literature available in the scientific literature, 2) the resources on the internet referable to professional and academic associations dealing with the topic and, 3) the laws, policy initiatives and funded programs that are aimed at the diffusion and applications of mental health in aging. The results of the present study are patchy. Although the importance of enhancing resources for the promotion of geropsychology has long been declared, the development process seems very slow and the adaptation of academic training at master's and doctoral levels in most developed countries - those that for demographic reasons and attitude should be more sensitive to the issue, does not seem to have consolidated, yet. Collaboration among diverse professionals is crucial for providing integrated and comprehensive care to older adults that addresses their physical, psychological, and social needs. In 2024, the year the APA has approved the expected revision of its APA guidelines for psychological practice with older adults, The present work would aim to be an updated, comprehensive memorandum highlighting the importance of prioritizing mental health in older adults by promoting health in general and disease prevention strategies, ensuring equitable access to mental health services integrated into primary care and designed for ageing.

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Lunch & poster 1 / 17

The raw and the cooked: an oculomotor investigation of attention to food

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In an eye tracking and pupillometry study, we investigated the factors influencing attentional capture when individuals see food items. We suggest that the two core motivational systems, namely Wanting (i.e.,the desire for food and meal selection) and Liking (i.e.,the subjective pleasure and arousal evoked by food), modulate attentional processes in different ways. Moreover, we hypothesized that two key factors influencing motivation and modulating attentional capture are the preparation of the food (e.g.,raw vs. cooked) and its caloric content (e.g.,high vs. low). To test these hypotheses, we presented 100 food images in two blocks: Multiple images block, where 4 different food items were shown together; and, Single image block, where each food item was presented alone. Importantly, we operationalized Wanting and Liking in terms of fixation durations and pupil dilation, respectively. Additionally, participants were asked to provide explicit ratings for each food image both in terms of Liking and Wanting. Finally, participants completed the Eating Disorder Inventory-3, allowing us to explore potential relationships between the EDRC scale and our motivational measurements. The findings revealed that both food preparation methods and caloric content significantly modulated fixation durations and pupil diameter changes. Moreover, we observed that dwell time on a food item emerged as a valid predictor of subjective ratings of 'Wanting'but not of 'Liking'. In addition, we observed an inverse relationship between the EDRC scale and fixation durations, suggesting a potential link between unhealthy eating habits and augmented concerning about the body with attentional processing of food stimuli.

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A neurocognitive screening of the executive functions in Gambling Disorder: a preliminary study

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This study investigated the potential of a new executive functions assessment battery developed for evaluating cognitive-neuropsychological correlates in addictions, and its remote administration in a sample of patients with gambling disorder (GD). The Battery for Executive Functions in the Addiction (BFE-A) comprises five neuropsychological tests aimed at measuring verbal short- and long-term memory, working memory, verbal and non-verbal cognitive flexibility, and focused attention - and a computerized Go/No-Go task modified with addiction-related stimuli to measure inhibitory control. Additionally, it includes a computerized Go/No Go task modified with addiction-related stimuli to measure inhibitory control. The study compared results from an experimental

sample of 13 GD-diagnosed patients recruited from ULSS 2 Marca Trevigiana, Servizio Dipendenze, Treviso, Italy, with a control sample of 13 healthy subjects. In the experimental sample, higher errors in verbal memory test repetition and lower word production in the verbal cognitive flexibility test were observed compared to controls. In the digitized Go/No Go task, GD reaction times were significantly longer than controls, particularly for neutral and addiction-related stimuli. Furthermore, higher impulsivity scores were found in the experimental sample compared to controls. Despite the exploratory nature of this study, the BFE-A demonstrated sensitivity in detecting alterations in memory and attentional bias observed in the inhibitory control task, alongside increased impulsivity, characterizing the executive deficits observed in GD. These findings underscore the potential of the digital battery as a new remote neurocognitive screening tool, valid and easy to apply, capable of providing relevant information for planning structured rehabilitation interventions.

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L'effetto "Intertrial Priming of Pop-Out"in compiti di ricerca tattile

Authors: Cristina Iani[1]; Elena Gherri[2]; Fabiola Rosaria Fiorino[3]

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Nei compiti di ricerca in cui la caratteristica che definisce lo stimolo target può cambiare da una prova all'altra, le risposte sono più rapide quando tale caratteristica è ripetuta rispetto a quando cambia.
Questo effetto, noto come "Intertrial Priming of Pop-Out"(PoP), suggerisce che le proprietà dell'array di ricerca precedente modulano l'efficienza della selezione dello stimolo target nella prova successiva. L'effetto PoP, ampiamente studiato nel dominio visivo, rimane poco esplorato nel tatto.
Al fine di indagare la presenza e le caratteristiche dell'effetto PoP in un compito di ricerca tattile, ai partecipanti è stato chiesto di localizzare uno stimolo target presentato tra tre distrattori omogenei (stimolo target ad alta frequenza tra distrattori a bassa frequenza o viceversa). In metà delle prove la frequenza dello stimolo target era ripetuta (condizione di ripetizione), mentre nell'altra metà era alternata (condizione di cambio).
Sono stati registrati accuratezza e velocità della risposta ed i potenziali evento-correlati (ERP), in particolare la componente N140cc, considerata il correlato elettrofisiologico dell'attenzione selettiva tattile. In linea con gli studi sulla ricerca visiva, la prestazione, in termini di accuratezza e velocità, è risultata migliore nella condizione di ripetizione rispetto alla condizione di cambio. Inoltre, l'ampiezza della componente N140cc era maggiore nelle prove di ripetizione rispetto alle prove di cambio.
La modulazione dell'ampiezza della componente N140cc suggerisce
che gli effetti di priming che si osservano a livello comportamentale sono già presenti durante la fase di selezione del target tattile, confermando l'origine attentiva di questo fenomeno.

Parole-chiave: attenzione selettiva tattile; PoP; ERPs; N140cc

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Lunch & poster 1 / 35

Understanding sustainable fashion consumption through the lens of the Theory of Planned Behavior

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Environmental issues and climate change require consumers to shift their habits towards more sustainable consumption behaviors. Recently, the negative environmental impact of the fashion industries has garnered increasingly attention. Hence, we conducted an exploratory study aiming at understanding which determinants and barriers shape consumers' sustainable fashion consumption. Additionally, we intended to make a cross-country comparison between Italy and Germany to check for similarities and differences in what motivates (or prevents) consumers to buy organic garments. We adopted the Theory of Planned Behavior (TPB) as a theoretical framework to investigate the main drivers behind the decision to buy sustainable apparel. Besides the three main determinants of behavior suggested by TPB (i.e., attitudes, subjective norms, and perceived behavioral control), we extended the framework by incorporating the role of personal norms, consumers' sustainable fashion awareness, climate change worry and connectedness to nature. Cross-sectional data stemming from a representative sample of Italian consumers (N = 1,002) are used to perform a Structural Equation Model. Findings suggest that various determinants seem to play a key role in sustainable fashion consumption, such as attitudes, (subjective and personal) norms, perceived behavioral control, climate change worry, and connectedness to nature. Conversely, awareness of the environmental impact of the fashion industry does not appear to be a significant prerequisite for sustainable fashion consumption. After the data collection for the German sample is completed, a multigroup path analysis will be performed. This will enable us to understand whether these psychological determinants of sustainable fashion consumption are moderated by cultural influences.

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Exploring the relationship between environmentalism and mobility: insights from the Values-Beliefs-Norms theory

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The Values-Beliefs-Norms theory is frequently utilized in environmental psychology to explain pro-environmental actions through a causal relationship among psychological dimensions. The theory suggests that values influence beliefs, which then shape personal norms. These factors interact and influence each other, promoting the adoption of Pro-Environmental Behaviors (PEB). However, the relationship between PEB and daily mobility choices has not been extensively researched. This study explores the relationship between environmentalism and ecological actions, such as PEB, habits, and the frequency of using sustainable modes of transportation in daily life. A total of 226 people (159 women), ranging in age from 19 to 85 years (mean 41.59, SD 14.24), completed several questionnaires independently and anonymously. Statistical analysis was used to examine the relationships among the variables, specifically through the Structural Equation Models (SEM) method. The study revealed that psychological factors, including values, beliefs, norms, and perceived behavioral control, have a significant impact on transportation frequency and habits in daily life. This study serves as a pilot test for selecting relevant psychological constructs to explore mobility choices. It serves as a prototype for developing and evaluating new questionnaires to investigate transportation habits and frequency of use.

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Smartphone e processi cognitivi: uno studio sperimentale sull' effetto brain drain

Author: Claudia Virginia Manara[1]

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[1] *University of Trieste*

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Un noto studio di Ward e colleghi (2017) ha messo in evidenza che la mera presenza dello smartphone (posizionato sul tavolo vs. in un'altra stanza) sembrerebbe interferire con le prestazioni cognitive (Ward et al., 2017). Tale effetto, definito "*brain drain*"da Ward e colleghi, è stato oggetto di alcuni tentativi di replica, con risultati nulli nella maggior parte dei casi. Il presente studio intende replicare concettualmente l'esperimento di Ward e colleghi (2017), utilizzando il paradigma dell'astinenza da smartphone per aumentarne la salienza ed enfatizzare conseguentemente questo effetto. L'esperimento prevedeva che tutti i partecipanti consegnassero il proprio smartphone agli sperimentatori e rimanessero in astinenza per circa 5 ore, durante le quali potevano studiare o leggere. Al termine del periodo di astinenza i partecipanti svolgevano dei task cognitivi dopo essere stati assegnati casualmente ad una delle due condizioni (le stesse di Ward et al. 2017): un gruppo svolgeva i task avendo il

proprio smartphone spento accanto a sé; il secondo gruppo svolgeva i task avendo il proprio smartphone in un'altra stanza. Nonostante sia stato riscontrato un aumento dell'astinenza nel tempo [F(2, 186) = 13.3, p < 0.001; eta2p = 0.125], dai risultati non è emerso alcun effetto *brain drain.* Dunque, il discusso effetto *brain drain* non sembra emergere nemmeno quando la salienza del dispositivo viene enfatizzata tramite l'astinenza. I risultati sono in linea con gli studi che mettono in dubbio l'esistenza stessa di questo effetto (Hartmann et al., 2020; Pardo et al. 2022).

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Resisting distraction during goal setting: insight from neurophysiological and behavioral data

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In professional settings, interruptions can frequently disrupt tasks, necessitating adaptive control processes and focused attention to meet deadlines effectively. This research explored the behavioral and electrophysiological (EEG) markers of professionals' capacity to resist distractions during a goal setting task, and their adaptability and willingness to adjust a previously determined time schedule. 33 professionals undertook the three phases of the Time for Goal task (T4G): Distractor Resistance (DR), Time Confidence Assessment (TCA) and Time-to-Action Adjustment (TAA). Three scores were derived from these phases (DR, TCA, and TAA). During the RD phase EEG activity of delta, theta, alpha, and beta frequency bands, was recorded continuously. Participants also filled in the 10-item Big Five Inventory (BFI). The findings revealed decreased beta band power in the post-distractor phase compared to the pre-distractor phase over both frontal regions. Conversely, increased beta band power was observed in the post-distractor phase compared to the pre-distractor phase in the right temporoparietal junction (rTPJ). Correlations between the EEG workload index (calculated from the ratio of post/pre-distractor EEG data) showed a negative correlation between the DR score and EEG beta workload index in the right frontal area and a negative correlation between the TAA score and EEG alpha workload index in the rTPJ. Additionally, a negative correlation was shown between Emotional Stability trait scores and the TAA score. This study identified a specific activation pattern associated with the ability to resist distractions, highlighting a crucial role for both the beta band and rTPJ in attentional processes and cognitive control.

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Does home advantage and referee bias in association football depend on spectators?

Author: Maria Colomba[1]

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In sports, the home advantage is the higher chance to win a game when playing home, while the referee bias is the referee decision bias in favor of the home team. During the pandemic period, a natural experiment occurred, due to the large number of matches played in absence of spectators. Previous studies examined the effect of spectators on these phenomena on a relatively small number of matches; the present study aimed to explore how the presence/absence of spectators affected these two phenomena on almost 4000 football matches, from the first and second divisions of the UEFA top five ranked federations (Spain, England, Italy, Germany, France) in the 2020-21 season. As for the home advantage, the following variables were examined: distribution of match outcomes and home advantage for points; ball possession; total shots; shots on goal; corner kicks. As for the referee bias, the following variables were considered: fouls; yellow cards; red cards; penalty kicks; extra time. Chi-square tests were used to compare the distribution of match outcomes (vs. previous seasons with spectators), and t-tests to compare home vs. away data in the 2020–21 season for the other variables. The results revealed that the absence of spectators significantly reduced the home advantage compared to previous seasons with spectators; however, a certain amount of home advantage still persists, probably due to the familiarity with local conditions and travel fatigue. The referee bias was not observed, suggesting that it mainly derives from the pressure normally exerted by spectators.

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Metacognitive awareness of lip-reading gains in young and older adults

Author: Elena Giovanelli[1]

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In this study we targeted metacognition of lip-reading benefits in older and younger adults listening to a visible talker in noise. We explored individuals' awareness of the advantages of lip-reading under the form of improved confidence and reduced listening effort. Additionally, we examine

whether this metacognitive awareness changes with age, investigating differences in metacognitive indexes and participants' self-evaluation of their actual listening improvements. Using a virtual reality hearing-in-noise task, older and younger adults listened to an avatar whose visibility was modulated adjusting the opacity of a panel. We measured real and perceived improvements, confidence improvement, and effort reduction as participants switched between different visibility conditions. Both age groups showed similar real improvements, revealing an underlying effective audio-visual integration. Moreover, comparable improvements in confidence suggested a lip-reading gain that impacts listening beyond mere performance, irrespective of age. The only group difference was found in effort reduction, which was smaller for older adults when lip visibility was greater, particularly among those with lower lip-reading abilities. Despite both groups displayed a consistent awareness of lip-reading gains, older adults may face greater challenges in audio-visual listening, which may interfere with their willingness to use lip-reading as a strategy in their everyday life. Effort, therefore, may be considered more than an index of how much resources are deployed in a task, becoming an internal feeling that may concur in deciding whether to implement adaptive behaviors, with important consequences on the design of interventions aimed at ameliorating older adult's quality of social interactions.

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Long range contributions to temporal inversion judgements

Author: Antimo Buonocore[1]

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Previous research has shown that visual stimuli presented across eye movements can distort time and space perception. Interestingly, introducing a full-field visual mask within 40 milliseconds after two brief visual events can reverse temporal judgments, even in the absence of eye movements. We explored whether the spatial characteristics of the mask could influence this temporal inversion effect. Specifically, we asked if a mask that was not superimposed on the visual stimuli was sufficient to induce the inversion illusion. In Experiment one, participants judged the temporal order of a test/probe stimulus pair under three conditions: no mask, a full-field mask, or a partial-field mask covering only the top and bottom third of the screen, but not the stimuli location. Masks appeared at various intervals after the probe stimulus. The inversion effect was visible with both full and partial-masks when presented within 30 milliseconds of the probe. In control measurements (Experiment two), delaying the mask's presentation relative to the probe abolished the effect. Experiment three was identical to Experiment one, but this time the mask was presented either in the ipsilateral visual field as the stimuli or in the contralateral hemifield. Both positions triggered a temporal inversion effect, although weaker with the contralateral mask. These findings suggest that the temporal inversion effect can be reliably induced also by masks not overlapping with the stimuli, indicating that the effect might be linked to a non-spatial signal, coupled with mask presentation timing.

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Lunch & poster 1 / 125

Swimming with piranhas will not make you go so far, at least for what concern operant conditioning tasks: a preliminary investigation in Pygocentrus nattereri

Authors: Desideriabruna Quaresima[None]; Alessandra Pecunioso[None]; Christian Agrillo[None]

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Most of the studies on the cognitive abilities of fish focused on models organisms adopted in behavioural neuroscience. To date, little attention has been devoted to characiformes fish and we record a lack of cognitive investigation on the piranha. In the present study, we aimed to assess whether red-bellied piranhas (Pygocentrus nattereri) can solve an automated operant conditioning task like the one used with mammals, birds, and other fish. Subjects underwent two colour discrimination tasks: first, fish were required to discriminate between red and green; second, fish had to discriminate between white and yellow. We found no evidence of learning capacities after extensive training exceeding one thousand trials overall. This preliminary observation suggests that piranhas may be limited in their capacity to cope with automated operant conditioning devices. We call for a further investigation of learning abilities in characiformes fish.

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Lunch & poster 1 / 15

Effetto boost attenzionale e pattern separation

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L'Effetto boost attenzionale si riferisce alla facilitazione nel riconoscimento di immagini (o parole) presentate insieme a stimoli target, ai quali i partecipanti devono rispondere, durante la fase di codifica. Uno studio precedente ha dimostrato che l'effetto boost può migliorare la discriminazione visiva di immagini molto simili tra loro (pattern separation; Sisk & Lee, 2022). Gli obiettivi di questo studio consistono nel replicare questo risultato e verificare la sua applicabilità a materiale verbale. In 4 esperimenti, i partecipanti studiavano una sequenza di stimoli (immagini o parole) associati a quadrati target o distrattori (differenziati in base al colore). Le istruzioni richiedevano di memorizzare tutti gli stimoli e contemporaneamente premere la barra spaziatrice del computer quando il quadrato associato assumeva un determinato colore target. In seguito svolgevano un test di riconoscimento che includeva stimoli identici a quelli studiati, stimoli simili (lures) o stimoli nuovi (foils). Per ciascuno stimolo, i partecipanti dovevano indicare se esso era 'identico', 'simile' o 'nuovo'. I risultati hanno

dimostrato che l'effetto boost migliorava la pattern separation con materiale visivo (immagini), mentre non aveva alcun effetto con materiale verbale. In quest'ultimo caso, l'assenza di effetti riguardava sia la pattern separation percettiva che la pattern separation concettuale. Questi dati suggeriscono che, a differenza delle immagini, l'elaborazione e la memorizzazione delle parole avviene ad un livello astratto che non include né i dettagli percettivi né l'informazione sella categoria semantica di appartenenza.

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No

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Disentangling decision making under value-based conditions in patients with Parkinson's disease

Author: Laura Colautti[1]

Co-authors: Paola Iannello [1]; Maria Caterina Silveri [1]; Anna Rita Giovagnoli [2]; Antonio Emanuele Elia [2]; Fulvio Pepe [3]; Eugenio Magni [3]; Alessandro Antonietti [1]

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Patients with Parkinson's disease (PD) may be more prone to make risky value-based decisions, probably due to impairments in anticipating the unrewarding consequences or to an insensitiveness to them. So far, evidence showed that: i) In PD neural structures pivotal in decision making (DM) are affected; ii) Dopaminergic medications may bias choices toward risk; iii) Cognitive functioning, in particular executive functions (EFs), is crucial to avoid risky decisions. The present study aimed at deepening the DM mechanisms in PD patients without impulse control disorders, both comparing the decisional performances between patients and healthy controls and analyzing the decisional performances in relation to different dopamine medications and cognitive functioning. Through a neuropsychological battery composed of cognitive tests to evaluate EFs and memory and decisional tasks (i.e., Iowa Gambling Task and Game of Dice Task), differences in value-based DM between 33 adults with PD (age: 66.21 ± 7.64 years; education: 10.61 ± 3.80 years) and 33 matched healthy controls (age: 65.94 ± 7.77; education: 10.82 ± 3.69) were explored. Decisional performances were further investigated in a sample of 42 PD patients (age: 66.4 ± 7.79 years; education: 9.90 ± 3.67 years). Results showed that PD patients made a higher number of risky decisions when compared to healthy controls, depending on the characteristics of the decisional situation. Furthermore, the number of risky choices was significantly related to the posology of dopaminergic medications and EFs. From present findings, several clinical implications can follow, considering that DM is fundamental for patients'wellbeing and autonomy.

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L'effetto del COVID-19 su ansia, depressione e condizioni del sonno: uno studio longitudinale su un campione spagnolo

Author: Marco Viola[1]

Co-authors: Guillaume Chevance [2]; Rosalba Rosato [3]; Manolis Kogevinas [2]

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L'obiettivo dello studio è verificare l'effetto nel tempo dei sintomi da COVID-19 sulle condizioni di ansia, depressione e sonno su un campione di adulti spagnoli. Le 601 persone hanno compilato il questionario su ansia, depressione e sonno, ogni 2 settimane, per un anno, all'interno del periodo che va tra la fine di luglio 2021 e dicembre 2022. Per ciascun partecipante sono disponibili anche i dati relativi all'infezione da COVID-19 precedente alla somministrazione del questionario. I rispondenti sono stati classificati in due gruppi a seconda della presenza o meno dei sintomi di COVID-19. L'età media del campione è 55 anni e il 60% sono femmine. Sono state calcolate media e deviazione standard per ansia, depressione e sonno; questi score sono stati calcolati nel tempo per ogni singolo soggetto seguendo un approccio idiografico. Sono state verificate le differenze di score nei due gruppi in presenza o assenza di sintomi di COVID-19. È stato implementato un modello lineare generalizzato per modellare medie e deviazioni standard dei tre score a seconda dell'appartenenza ai gruppi. Si evidenzia una differenza nello score di depressione, con un livello superiore nel gruppo con sintomi ($t = -2.16$, $p=0.02$). L'appartenenza a questo gruppo aumenta lo score di depressione indicando un peggioramento nelle condizioni di anedonia ($\beta=0.33$, $p=0.04$). La presenza del COVID-19 aumenta significativamente la deviazione standard di ansia e depressione ($\beta=0.11$, $p=0.05$, $\beta=0.13$, $p=0.03$ rispettivamente), indicando condizioni meno stabili. Nulla risulta invece significativo per le condizioni del sonno ($\beta=-0.35$, $p=0.14$; $\beta=0.09$, $p=0.20$ per media e deviazione standard rispettivamente).

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Il ruolo dell'attenzione visuo-spaziale nell'elaborazione semantica in parafovea

Author: Valentina Bandiera[1]

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[1] *LUMSA Università*

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Il presente studio si pone l'obiettivo di indagare il ruolo dell'attenzione visuo-spaziale durante l'elaborazione semantica delle informazioni in parafovea.
È stato utilizzato il paradigma Rapid Parallel Visual Presentation (RPVP) che prevede la presentazione simultanea di due parole per 150 ms, una in fovea (W1) e una in parafovea (W2), controllate

per lunghezza e frequenza d'uso. Metà delle coppie era semanticamente relata (SR) e metà non lo era (NSR). A intervallo zero dalla scomparsa delle parole, appariva un probe (un asterisco rosso) nel 50% di stimoli (metà SR e metà NSR), in prossimità dell'ultima lettera della parola in parafovea.
Compito del partecipante era quello di leggere entrambe le parole e di premere un tasto ogni volta che compariva il probe. Sono stati misurati tempi di lettura sulla W1, accuratezza di lettura della W1 e W2, tempi di reazione per la pressione del tasto alla comparsa del probe (TR).
I risultati indicano tempi di lettura più brevi e maggiore accuratezza nella lettura di coppie di parole SR rispetto a quelle NSR. Inoltre i TR mostrano una velocizzazione nella detezione del probe quando gli stimoli sono semanticamente relati.
I dati sono stati interpretati nell'ottica del zoom-lens model. In particolare ipotizziamo che la relazione semantica funga da "facilitatore"nella detezione del probe in parafovea, permettendo un allargamento del gradiente attenzionale, per cui la detezione del target risulta essere più veloce.

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No

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Cue Contaminati: il Ruolo del Sistema Immunitario Comportamentale nella Modulazione dell'Attenzione Condivisa

Authors: Serena Marchesi[1]; Marco Tullio Liuzza[2]; Mario Dalmaso[1]

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Gli ambienti sociali in cui ci muoviamo sono ricchi di stimoli capaci di suscitare emozioni diverse nelle persone. Come esseri intrinsecamente sociali, noi esseri umani abbiamo sviluppato diversi processi per proteggerci e socializzare con altri esseri umani. Tra queste componenti troviamo il sistema immunitario comportamentale (SIC), risultato di una combinazione di processi socio-cognitivi, affettivi e comportamentali che si sono evoluti per identificare potenziali minacce patogene.

Il presente studio esplora gli effetti di stimoli di priming emotivo sull'attenzione sociale per studiare come il SIC moduli l'allocazione delle risorse attentive. Per fare ciò, utilizzeremo un paradigma sperimentale online. In particolare, i partecipanti verranno stimolati con immagini create per evocare disgusto, metà contenenti patogeni e l'altra metà non contenenti patogeni. Successivamente, i partecipanti completeranno un classico gaze-cueing task, in cui i cue verranno presentati sotto forma di frecce o volti umani.

Ipotizziamo che l'esposizione a stimoli patogeni aumenterà l'attivazione del SIC, influenzando di conseguenza i processi attentivi risultando in un maggiore gaze-cueing effect (GCE). Inoltre, ipotizziamo che questa influenza varierà a seconda della natura del cue, con effetti differenziali osservati per i cue sociali e non sociali. Attraverso l'analisi dei tempi di risposta dei partecipanti e dell'accuratezza nel seguire i cue, questo studio mira a chiarire i meccanismi attraverso cui il SIC influenza l'attenzione congiunta.

I risultati ottenuti avranno implicazioni nella comprensione delle funzioni adattive del SIC legate alla cognizione sociale. Inoltre, i nostri risultati potrebbero informare la ricerca in diversi settori, tra cui la psicologia cognitiva e sperimentale e la sanità pubblica.

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Valutazione cognitiva in VR: 360° vs. modelli 3D

Author: Daniele Romano[1]

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La Realtà Virtuale (VR) è sempre più utilizzata per creare strumenti avanzati di valutazione ecologica delle funzioni cognitive. Tuttavia, comprendere i vantaggi e le sfide introdotte da questa nuova tecnologia è cruciale per sviluppare test neuropsicologici più funzionali. Questo studio ha analizzato l'influenza del tipo di ambiente virtuale (VR a 360° vs. VR model-based) sulle capacità cognitive e sull'esperienza soggettiva. Sono stati sviluppati due scenari: uno utilizzava un'immagine sferica di un ambiente reale (360°-VR), l'altro importava modelli 3D per replicare lo stesso ambiente (VR model-based). I partecipanti sono stati assegnati casualmente a uno di questi scenari. In due esperimenti, sono stati implementati due compiti cognitivi in entrambi gli ambienti: un compito attentivo (Esperimento 1) e un compito di memoria (Esperimento 2). Si sono confrontate le prestazioni (tempo e accuratezza) e le esperienze soggettive dei partecipanti (attraverso questionari) tra i due tipi di ambiente. Non sono emerse differenze evidenti nelle prestazioni, ma è emerso che la VR a 360° è percepita come più ecologica in termini di realismo dell'ambiente. Allo stesso tempo, si sono osservati livelli simili di presenza, predisposizione individuale all'immersione e usabilità all'interno dei due ambienti virtuali. Lo studio supporta l'utilizzo della VR a 360° per fornire stimoli altamente realistici, migliorando la validità ecologica delle procedure di valutazione. Tuttavia, si raccomanda di considerare attentamente le caratteristiche di ogni scenario per personalizzare l'esperienza VR in base allo scopo del test, garantendo misurazioni affidabili e informative.

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L'ELABORAZIONE DI OGGETTI AFFERRABILI ACCOPPIATI A MANI EGOCENTRICHE: UNO STUDIO SULL'EFFETTO DI CORRISPONDENZA MANICO-MANO

Authors: Matilde Mariabarbara Torrisi[1]; Iring Koch[2]; Usman Shaikn[3]; Ferdinand Binkofski[4]; Antonello Pellicano[5]

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[2] *Institute of Psychology, RWTH Aachen University*

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In un compito di scelta, la prestazione è tipicamente più veloce e accurata quando l'orientamento della porzione afferrabile di un utensile corrisponde alla posizione della risposta manuale (effetto di corrispondenza manico-mano). Secondo una spiegazione aggiornata in termini di "affordance activation", il manico, visivamente saliente o meno, attiverebbe un'appropriata azione di afferramento della mano ad esso allineata.
Secondo una linea di ricerca indipendente, le risposte motorie sono facilitate per oggetti presentati vicino al palmo di una mano versus vicino al dorso. Nel primo caso, gli oggetti diventerebbero candidati all'azione ricevendo un'elaborazione più approfondita (effetto di prossimità funzionale della mano).
Nell'intento di unire i due domini, il presente studio ha testato l'ipotesi secondo la quale l'elaborazione di utensili in associazione a mani egocentriche sia cruciale per l'attivazione di affordances.
Immagini di utensili con il manico rivolto verso sinistra o destra sono state accoppiate a immagini di mani. I partecipanti premevano un tasto sinistro o destro in presenza di una mano sinistra o destra, allineata o meno con il manico dell'utensile. Le mani potevano avere una posa afferrante-Esperimento 1, di palmo-Esperimento 2, di dorso-Esperimento 3. Affordance di afferramento (e contestualmente effetti di corrispondenza manico-mano) si sarebbero dovute produrre con mani afferranti (in maggior misura) e di palmo, ma non con mani di dorso. Tuttavia, l'effetto è risultato significativo anche con mani-dorso e di ampiezza simile nelle tre condizioni. I risultati sono compatibili con un basilare effetto di corrispondenza direzionale stimolo-stimolo (tipo-Stroop) generato da una codifica spaziale astratta di mani e utensili raffigurati.

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Differenze di Sincronizzazione e Collaborazione tra Lavoro in Presenza e da Remoto: un Protocollo di Ricerca

Authors: Giulia Magni[1]; Luana Amadini Genovese[1]

Co-authors: Claudia Repetto [2]; Daniele Di Lernia [1]; Giuseppe Riva

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Nel contesto lavorativo contemporaneo, le aziende sono spinte a un rapido adattamento alle nuove modalità e agli strumenti tecnologici sempre più avanzati. Queste innovazioni hanno però ripercussioni sui livelli di attenzione, engagement e sintonizzazione nelle interazioni interpersonali.
Il presente studio intende indagare il processo di collaborazione e sincronizzazione in una popolazione di lavoratori, confrontando due condizioni di lavoro: presenza e da remoto. Secondo un disegno di ricerca within-subjects, 24 adulti divisi in 12 coppie parteciperanno ad entrambe le condizioni sperimentali, per indagare come la modalità lavorativa influenza sincronizzazione neurale e livello di cooperazione. Sono previste due sessioni, ciascuna della durata di circa due ore, aventi

la stessa struttura sperimentale caratterizzata da due task cognitivi collaborativi. Nella condizione in presenza, la diade si troverà nella stessa stanza, mentre nella condizione da remoto i partecipanti saranno in due stanze differenti e la loro interazione avverrà tramite l'applicativo di Microsoft Teams. La sperimentazione prevede l'utilizzo di elettroencefalogramma (EEG) per misurare l'attività neurale e di elettrocardiogramma (ECG) per l'attività cardiaca. Verrà, inoltre, utilizzata la tecnica di hyperscanning, che permette di rilevare l'attività neurale e cardiaca di due o più persone contemporaneamente. Alle misure fisiologiche sono infine aggiunte misure comportamentali e questionari cognitivi.
Questo studio, all'interno del progetto BRIC-INAIL "Rischi psicosociali emergenti nel cambiamento del mondo del lavoro", si propone di apportare un contributo significativo alla comprensione dei processi cognitivi e psicofisiologici propri del contesto lavorativo attuale e in mutamento, esaminando come le diverse modalità di lavoro impattano meccanismi chiave quali collaborazione e sincronizzazione interpersonale.

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Exploring the Relationship between Sleep Restriction and Emotion Regulation as a Function of Depressive Traits

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Co-authors: Giulia Avvenuti [2]; Erika Sampaolo [3]; Luca Cecchetti [3]; Giulio Bernardi [4]

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Short periods of sleep restriction have been found to alleviate symptoms of depression. Among other manifestations, depression is characterized by anhedonia, a lack of enjoyment from life's experiences. According to this, individuals with depressive symptoms may exhibit less frequent or reduced reactions to positive emotional stimuli, performing paradoxically better in emotion suppression tasks. Recent evidence suggests that after short sleep periods, potentially indicating a state of sleep restriction, healthy people show higher rates of emotion suppression failures than after long sleep periods. Based on these premises, we hypothesize that the impact of sleep restriction on emotion suppression performance will correlate with the individual's level of depression. To test this, participants will be shown amusing videos and will be instructed to maintain a neutral expression while their faces will be recorded. Smiling will be considered a failure in emotion suppression. Each participant will complete the task twice: once after a full night of sleep, and again after sleeping 50% of their usual amount. Prior to the first experimental session, they will fill in questionnaires assessing depressive symptoms and empathy. Comparing each participant's performances between the two experimental conditions, we expect to observe an effect of sleep restriction on participants'ability to regulate their emotional reactions. Also, analyzing the performances and questionnaires'scores we will determine whether there is a correlation between emotion suppression failures and depressive traits. This study is pre-registered and may help our understanding of how sleep restriction affects depression, as the extent of this relationship is still unclear.

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No

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Ideal and real mental representation in individual or group-oriented people: a neuroscientific prospective

Authors: Carlotta Acconito[1]; Laura Angioletti[2]; Roberta Antonia Allegretta[3]; Michela Balconi[1]

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During the decision-making process, people create mental representations of the situation, that could be directed at the "real"or "ideal"world. Moreover, when people decide, they could adopt an individual or group orientation. In the first type of orientation, people consider the task and personal needs as more relevant than relationships, while group orientation is characterized by a high value placed on relationships and consideration of others'perspectives. This study explored the neural localization of group or individual orientation, while people mentally represented their ideal and real work group. Sixteen health participants performed a novel decision-making task, identifying themselves with a critical scenario and rating items about how the real and ideal group could solve the problem. A non-invasive electroencephalogram was adopted to collect brain activity (i.e., alpha and gamma band) in four regions of interest [Frontal 1 (F1: AFF5h, Fp1), Frontal 2 (F2: Aff6h, Fp2), Temporo-parietal 1 (TP1: T7; P3), Temporo-parietal 2 (TP2: T8; P4)]. The manipulation of mental representations (ideal versus real) was responsible for different cortical networks concerning group and individual orientations, particularly for the alpha and gamma bands. A more cognitive effort in creating mental representation and information processing, as well as memory processing, defined the individual orientation in ideal representation. Furthermore, increased temporoparietal region activation - especially in the real representation –was reported in the group orientation.

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No

Keynote talk, Salvatore Aglioti / 479

Morality in the Flesh: Influence of Corporeal Signals on Moral Decisions in Real and Virtual Social Interactions

Embodied cognition theories suggest that even abstract processes such as, for example, language syntax can be influenced by the sensorimotor signals through which bodily self-consciousness -our sense of owning a body (ownership) and being the author of actions (agency)- is built and maintained. Using an embodied morality framework, I will report on recent research that explores how bodily signals affect moral decision-making with a specific focus on whether strengthening or weakening participants'sense of ownership and agency over artificial agents influences dishonesty in real and virtual interactions. I will consider innovative technologies, such as ingestible devices that can transmit gut signals during cognitive and emotional tasks, alongside established experimental methods like physiological recordings of autonomic nervous activity. I will also discuss the impact of exteroceptive (e.g., the external features of a virtual body such as its physical appearance) and interoceptive cues (e.g., the internal bodily states shaped by cardiac, or thermal signals) on modulating bodily self-consciousness and its relationship with (dis)honest decisions. Additionally, I will examine the contribution of less explored, deep body signals, like respiratory and gastrointestinal, supposedly involved in regulating homeostasis and allostatic brain-body interactions. Delving into how corporeal cues modulate higher-order functions will offer novel insights into how comparatively low-level body-related variables influence moral decisions at behavioral, physiological, and neural levels.

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Mini-talks: ACTION & MOTION (1) / 92

Dual-task effects on sustained attention and inhibitory control in a partial sleep deprivation paradigm

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The widespread effect of sleep deprivation on basic cognitive functioning raises the question of its effect on daily activities, and particularly those that –being performed simultaneously –are inherently more challenging. The simultaneous performance of a cognitive and a motor task (i.e., dual-tasking) has indeed shown to reflect an interference, usually referred to as Cognitive Motor Interference (CMI). CMI is generally quantified in terms of dual-task effects (DTEs), tracking the extent of the interference between single and dual-tasking for both cognitive and motor performance. This study aimed at investigating the effect of an acute partial sleep deprivation on upper limb dual-task performance. Through a within-subject design, participants screened for good sleep quality (Pittsburgh Quality Index ≤ 5) underwent one night of normal sleep (NS), from 12AM to 9AM, and one night of partial sleep deprivation (SD), from 1AM to 6AM. After both NS and SD conditions, participants performed, in randomized order, tasks targeting inhibitory control (Go/No-go task; GNG), sustained attention (Psychomotor vigilance task; PVT) and motor performance (finger tapping; FT) under single (ST) and dual-task (DT) conditions (i.e., the FT motor task was combined with either PVT or GNG). Regardless of the sleep condition, comparing DT and ST performance revealed significant DTEs for both cognitive abilities. Moreover, we observed larger DTEs after sleep deprivation compared to normal sleep. Unveiling the factors shaping dual-task performance in sleep-deprived situations can provide novel insights into the implications of both sleep-disordered conditions and specific lifestyles entailing occasional sleep deprivation.

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Mini-talks: ATTENTION (1) / 88

Dove scompaiono oggetti categorizzati come lenti o veloci? Uno studio sul "momentum rappresentazionale"

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Le caratteristiche fondamentali di uno stimolo, come la dimensione, il contrasto, la tessitura e il volume, così come il contesto e la salienza emotiva, possono influenzare la percezione soggettiva in compiti psicofisici riguardanti il tempo e la velocità. Ricerche recenti hanno dimostrato che, oltre alle caratteristiche dell'oggetto e al contesto, le aspettative acquisite nel corso della vita possono influenzare attributi della percezione. In questo studio, miriamo a misurare il "momentum rappresentazionale", ossia il giudizio sul punto di scomparsa di un oggetto in movimento, utilizzando stimoli che dovrebbero essere categorizzati implicitamente come "lenti" o "veloci". Ipotizziamo che la categorizzazione implicita dello stimolo come "lento" o "veloce" possa influenzare il compito e ci aspettiamo un errore maggiore verso la direzione di movimento per gli stimoli "veloci", supportando l'idea che il significato simbolico degli oggetti possa modulare anche il "momentum rappresentazionale". Utilizzando stimoli in movimento orizzontale, come una bicicletta (oggetto lento) e una moto da corsa (oggetto veloce), non abbiamo riscontrato nessuna differenza significativa. Tuttavia, utilizzando stimoli in movimento verticale, come un razzo spaziale (oggetto veloce) e una chiesa (oggetto statico), abbiamo osservato, in modo controintuitivo, un maggiore errore nel giudizio del punto di scomparsa verso la direzione del movimento per lo stimolo che dovrebbe essere categorizzato come "lento". Questo bias è coerente con ricerche precedenti che spiegano tale effetto come una violazione dell'aspettativa, concettualmente simile all'illusione di dimensione-peso e all'illusione di violazione della velocità attesa.

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Mini-talks: EMOTION (1) / 19

fNIRS investigation on unpredictable emotional sounds

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Listening to unpredictable aversive sounds, such as screams, can induce specific neural responses, corresponding to the differential activity of emotional processing-related brain areas. Moreover, human screams have been shown to induce transient states of fear and anxiety, being linked to personal or conspecific signals of danger.
Our aim is to investigate the neural activity associated to states of fear and anxiety induced by unpredictable screams, controlled by unpredictable safe sounds, such as human laughs. Additionally, we want to test if such transient fear/anxiety states can impact the successive execution of tasks with a social valence.
The experiment procedure includes two randomized blocks for each participant, one "safe"and one "threat", in which participants will hear unpredictable sounds (i.e. laughs and screams).
After each block participants will then execute a virtual social task, consisting in a human avatar approaching them at a constant speed. Participants will be asked to stop the approach whenever they feel the proximity with the avatar is not comfortable anymore. Anxiety and comfort rating scales will also be administered.
For the entire duration of the two blocks cortical activity of frontal and temporal areas will be measured through fNIRS, a non-invasive technique that allows to estimate the cortical hemoglobin changes.
We expect to find differential cortical activity associated to threatening sounds versus safe sounds, and a different social task response after each block, corresponding to a greater distance kept from the avatar after the threat block.

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Mini-talks: LANGUAGE / 85

L'effetto Bouba-Kiki nel pulcino di pollo domestico: uno studio comparato sull'origine del fono-simbolismo

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L'effetto Bouba-Kiki è uno dei più famosi esempi di associazione fono-simbolica e consiste nell'associare spontaneamente la non-parola 'Bouba'a forme tondeggianti e la non-parola 'Kiki'a forme spigolose. Sebbene questo effetto compaia già in bambini preverbali (tra i 4 e i 7 mesi), non vi sono ancora dati conclusivi circa la possibilità che sia un meccanismo predisposto o dipendente dall'esperienza. Questo perché non è possibile escludere completamente il ruolo di variabili quali la rapida velocità di apprendimento dei neonati, l'elevata sensibilità a regolarità statistiche e le molteplici associazioni fono-simboliche a cui sono esposti fin dalle prime interazioni con gli adulti. In questo lavoro viene adottato l'approccio comparato per meglio comprendere l'ontogenesi del fono-simbolismo, e in particolare dell'effetto Bouba-Kiki, attraverso il modello del pulcino di pollo domestico (Gallus gallus). Quarantadue pulcini di tre giorni di vita sono stati addestrati ad aggirare un pannello per ottenere una ricompensa alimentare. Successivamente gli animali sono stati testati in 24 prove in cui

si osservava se avessero una preferenza per aggirare uno di due pannelli presentati contemporaneamente: uno contrassegnato da una forma spigolosa e l'altro da una forma tondeggiante. In ciascuna prova veniva inoltre presentato un suono di sottofondo che poteva essere la ripetizione della non-parola 'Bouba'o 'Kiki'. Si è visto che i pulcini approcciano preferenzialmente il pannello con la forma rotonda quando sentono il suono 'Bouba'e quella spigolosa quando sentono il suono 'Kiki'. I risultati ottenuti suggeriscono l'esistenza di un meccanismo predisposto alla nascita e condiviso tra diverse specie.

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Mini-talks: LIFE CYCLE / 24

QUALI SONO LE CARATTERISTICHE DI PERSONALITÀ CHE FAVORISCONO LA DIPENDENZA DA SMARTPHONE NEI BAMBINI?

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Negli ultimi anni si è riscontrato un incremento dell'uso quotidiano dello Smartphone anche in bambini in età scolare.
Per tale valutazione si è utilizzato un questionario auto valutativo per la misurazione della dipendenza da Smartphone SARCQ (Conte et al., 2022), mentre per gli aspetti di personalità si é utilizzato il BFC (Barbaranelli, et al., 2003). Si dono osservate correlazioni tra il SARCQ e il BFC: una correlazione negativa significativa (r = -0,41) tra il "fattore dipendenza"e il fattore Amicalità, con il fattore Coscienziosità (r = - 0,35), con il fattore Apertura Mentale (r = -0,41), mentre si è osservato una correlazione positiva (r = 0,31) con il fattore Instabilità Emotiva. Per il "fattore coperta di Linus"si è riscontrata una correlazione negativa significativa con il fattore Amicalità (- 0,31), con il fattore Coscienziosità (- 0,29) e con il fattore Amicalità (- 0,29).
Alla luce di questi risultati l'utilizzo dello Smartphone come "oggetto di dipendenza"o come "coperta di Linus"riguarda i bambini con scarsa Amicalità, bassa Coscienziosità, con problemi di socializzazione.

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No

Mini-talks: ACTION & MOTION (1) / 158

When self-agency goes wrong: the case of schizophrenia.

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The sense of agency is the feeling of voluntarily controlling our actions and, through them, the events in the outside world. Here, we explored the sense of agency in individuals with schizophrenia.
We measured the intentional binding phenomenon (an implicit index of self-agency) using a validated ecological temporal judgment paradigm based on the comparison between active and passive movements.
Participants (30 patients and 30 controls) were instructed to actively or passively press a switch to turn on a light bulb. In both movement conditions, the bulb turned on with variable delays (250, 450 or 650ms). Participants had to judge the temporal interval between the action (keypress) and the outcome (lighting of the bulb).
We analysed the subjective perceived temporal compression of the action-outcome interval across movement conditions and delays: based on the intentional binding phenomenon, the higher the perceived time compression, the stronger the experienced implicit sense of agency.
Our results indicate that time compression values are greater in active compared to passive actions, particularly for shorter action-outcome temporal delays (Condition×Delay: p=.007). Compared to controls, patients show a reduced difference in compression between active and passive actions (Group×Condition: p=.004).
These findings suggest that, although the experience of agency is similarly modulated by movement conditions and temporal delays in controls and patients, the distinction between voluntary and involuntary actions is less clear-cut in patients. This dysfunction might contribute to some agency-related symptoms typically present in schizophrenia (e.g., delusions of control).

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Mini-talks: ATTENTION (1) / 114

Exerted listening effort guides lip-reading when listening to speech in noise

Author: Elena Gessa[1]

Co-authors: Chiara Valzolgher [1]; Elena Giovanelli [1]; Massimo Vescovi [1]; Chiara Visentin [2]; Nicola Prodi [2]; Eloise Di Blasi [1]; Viola Sadler [1]; Francesco Pavani [1]

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In challenging acoustic scenarios, individuals can implement behavioral strategies (e.g., lip-reading) to enhance speech comprehension. We hypothesized that lip-reading depends on the exerted listening effort that accompanies challenging conditions. To test this, we manipulated listening effort through variations in cognitive demands and motivation. Normal-hearing adults (N=64) performed an audiovisual speech-comprehension in noise in combination with a concurrent mnemonic task with low vs. high working memory engagement. Motivation was manipulated between-subjects through fixed or performance-related monetary rewards. Lip-reading was tracked with eye-movement and pupil dilation served as a physiological measure of listening effort, confirming manipulation effectiveness. Crucially, we found that exerted listening effort influences lip-reading behavior, with motivation playing a key role in this behavioral adaptation to enhanced cognitive demands. These

findings document the association between internal mental processes and behavioral adaptation in the speech domain.

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Mini-talks: EMOTION (1) / 29

Beyond the Screen: A Neuroscientific Approach to Remote vs. In-Person Job Interviews

Authors: Flavia Ciminaghi[1]; Katia Rovelli[1]; Laura Angioletti[1]; Michela Balconi[1]

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In the contemporary landscape of job recruitment, characterized by an ever-growing digital presence, the utilization of digital platforms for conducting job interview simulations is becoming increasingly significant. Nevertheless, there exists a notable gap in understanding the impact of these simulations in contrast to traditional interviews on stress management. This study aims to examine this impact through the analysis of behavioral, autonomic, and neurophysiological responses in a sample of 53 healthy adults (Mage = 25.25, SDage = 3.435, age range: 22-35, Nmale = 17, Nfemale = 35). Using a multi-method approach, participants were divided into two groups: one underwent a modified Digital Trier Social Stress Test (D-SST), the other a real-life simulated version (R-SST). Data on stress regulation (RegStress), resilience capacities (ResStress), reaction times, electroencephalographic (EEG) and autonomic responses were collected during interview preparation. Regardless of group, better stress regulation correlated with higher resistance. However, the D-SST group showed higher RegStress scores, likely due to perceiving the digital scenario as less stressful. EEG analysis revealed distinct patterns between groups, indicating greater cognitive effort in the R-SST group but lower self-awareness in the D-SST group. Skin conductance response was higher in the R-SST group, suggesting greater emotional engagement. These findings indicate varied stress responses to digital versus realistic interviews, with differing behavioural, EEG, and autonomic profiles.

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Mini-talks: LANGUAGE / 190

Take Your Time: What Meter and Rhythm can tell us about Developmental Dyslexia.

Author: Desirè Carioti[1]

Co-authors: Camilla Figini [1]; Carlo Toneatto [1]; Maria Teresa Guasti [1]; Martina Riva [1]; Natale Adolfo Stucchi [1]

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Rhythm and reading must be somehow related, as several studies uncovered that dyslexic individuals display poor performance in rhythmic tasks. However, the nature of the rhythm-reading relationship is far from being fully explored. The present work aims at establishing whether the disadvantage observed in participants with dyslexia has its origins in rhythmic awareness, meter reproduction and, thus, motor control, or, as proposed by Pagliarini et al. (2020), anticipatory timing skills.
To this aim, we included in our study 61 participants (F = 35; M = 25; not binary = 1; age on average = 21.6 SD = 2.42), 29 of them with learning disorders and related difficulties in reading, asking them to complete a rhythm discrimination task, a tapping task at different speed (60-80-100-120 bpm) and a new version of anticipatory timing task.
Data were analyzed through different logistic mixed models (GLMM) including participants as random intercept, to test whether performance in each task could classify participants as part of the experimental or the control group.
Although all tasks could discriminate the two groups, participants with dyslexia reported a minimal disadvantage ($p= 0.03$) in rhythm discrimination, while they displayed a significant ($p < .001$) deficit in fast meter reproduction and anticipatory timing. These results suggest not just that dyslexic participants have lower skills in more complex tasks that require fast procedural information integration but highlight also the role of fast sequential production of movements, supporting the cerebellar theory.

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Mini-talks: LIFE CYCLE / 93

Brain Topology Underlying Executive Functions Across the Lifespan: Focus on the Default Mode Network

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While traditional neuroimaging approaches to the study of executive functions (EFs) have typically employed task-evoked paradigms, resting state studies are gaining popularity as a tool for investigating inter-individual variability in the functional connectome and its relationship to cognitive performance outside of the scanner. Using resting state functional magnetic resonance imaging data from the Human Connectome Project Lifespan database, the present study capitalised on graph theory to chart cross-sectional variations in the intrinsic functional organisation of the frontoparietal (FPN) and the default mode (DMN) networks in 500 healthy individuals (from 10 to 100 years of age), to investigate the neural underpinnings of EFs across the lifespan. Topological properties of both FPN and DMN were predictive of EF performance, but not of a control task of picture naming, providing specificity in support for a tight link between neuro-functional and cognitive-behavioural efficiency within the EF domain. The topological organisation of the DMN, however, appeared more sensitive to age-related changes relative to that of the FPN. Because the DMN matures earlier in life than

the FPN, it is more susceptible to neurodegenerative changes and because its activity is stronger in conditions of resting state, the DMN might be easier to measure in noncompliant populations and in those at the extremes of the life-span curve, namely very young or elder participants. Here, we argue that the study of its functional architecture in relation to higher order cognition across the lifespan might, thus, be of greater interest compared with what has been traditionally thought.

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Mini-talks: ACTION & MOTION (1) / 198

Motor inhibition in joint action with natural and artificial agents

Author: Giulia Siri[1]

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Motor inhibition is crucial for effective collaboration between people, as it allows us to suppress and adjust actions in joint action scenarios (JA). Previous research showed a social effect on motor inhibition: a delay in stopping ongoing motor actions with others, relative to when conducting actions alone. This effect is presumably due to the need to represent both our own actions and those of our partner, thus delaying motor inhibition mechanisms. In this study, with the use of a humanoid robot, we explored the factors that contribute to this social effect on motor inhibition. We asked participants to perform a joint action task with another agent. Their task was to open a bottle held by a mechanical clamp or a partner (human or robot). On 33% of the trials, they heard a stop signal tone, which indicated that they needed to stop an ongoing action. In Experiment 1, participants performed the task with a static humanoid robot, while in Experiment 2 with a human confederate instructed to not exhibit any social behavior. In Experiment 3, participants performed the task with a robot exhibiting social behaviors. Results indicate a delay in motor inhibition in Experiment 2, but not in Experiment 1, suggesting that only human partners impact motor inhibition even without any social behavior exhibited. Experiment 3 showed that the robot's social behavior speeds up motor inhibition. Results suggest that social behavior influences motor inhibition differently depending on the interaction partner.

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Mini-talks: EMOTION (1) / 74

Differenze di orientamento sessuale ed identità di genere nella lateralizzazione delle funzioni sociali ed emozionali

Author: Gianluca Malatesta[1]

Co-authors: Anita D'Anselmo [2]; Chiara Lucafo' ; Daniele Marzoli [1]; Giulia Prete [1]; Luca Tommasi [1]; Teresiana Azzilonna [1]

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Il *Cradling Bias Sinistro* (l'asimmetria motoria per cui si tende a cullare i neonati maggiormente sul lato sinistro del proprio corpo a livello di popolazione) è stato spesso associato alla specializzazione emisferica destra per i processi sociali ed emozionali. Inoltre, la ricerca ha quasi sempre dimostrato una prevalenza maggiore di tale asimmetria tra gli individui di sesso femminile rispetto agli individui di sesso maschile. In questo studio abbiamo esplorato gli effetti dell'orientamento sessuale e dell'identità di genere su questo bias laterale mediante un'indagine online in un campione di adulti (485 femmine biologiche e 196 maschi biologici) reclutati attraverso network LGBTQIA+ e gruppi universitari generici. Abbiamo utilizzato un compito di *cradling immaginativo* per valutare la preferenza laterale dei partecipanti, e questionari standardizzati per valutare l'orientamento sessuale (*Klein Sexual Orientation Grid*; **KSOG**) e il grado di conformità del genere percepito con il sesso biologico assegnato alla nascita (*Gender Identity/Gender Dysphoria Questionnaire For Adolescents and Adults*; **GIDYQ-AA**) dei partecipanti. I risultati hanno confermato la prevalenza attesa del Cradling Bias Sinistro in tutti i gruppi basati sull'orientamento sessuale dei partecipanti tranne che nei maschi eterosessuali. Inoltre, punteggi KSOG più elevati erano associati a proporzioni più elevate di cradling sinistro nei maschi biologici. Questi risultati suggeriscono che l'orientamento sessuale può influenzare la preferenza laterale di cradling nei maschi, indicando una complessa interazione tra fattori biologici e psicologici nella lateralizzazione delle funzioni sociali ed emozionali. Infine, il Cradling Bias Sinistro sembra confermare il suo ruolo di *proxy* di tali funzioni cerebrali nel comportamento umano.

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Mini-talks: ATTENTION (1) / 128

Are dynamic brain state transitions during rest reliable markers of individual neuropsychological and behavioral differences in preschoolers?

Author: Giovanni Mento[1]

Co-authors: Natalia Zdorovtsova [2]; Gabriela Epihova [2]; Gian Marco Duma [3]; Fiorella Del Popolo Cristaldi [1]; Massimiliano Pastore [4]; Duncan Astle [2]; Lisa Toffoli [1]

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The recurrent activation over time of distinct cortical networks, also known as brain states (BSs), plays a crucial role in supporting cognitive control (CC) performance across the lifespan. Hidden Markov Models (HMMs) have emerged as a valuable tool for identifying BSs. However, studies utilizing HMMs in developmental populations are relatively limited. In this study, we employed high-density electroencephalography (HD-EEG) to identify BSs during rest in a cohort of typically developing, preschool-aged children. Additionally, we computed individual switching rates (SR), entropy, and probabilities of transitions between BSs. Our primary objective was to explore the potential relationships between these individual neurofunctional indices and the participants' neuropsychological and behavioral profiles. A total of 39 neurotypical children, aged 4 to 6 years, participated in two separate resting-state sessions with HD-EEG. They also completed a computerized cognitive task assessing reactive/proactive CC and underwent a battery of executive function tests. Our model identified discrete spatiotemporal patterns mimicking well known resting-state networks, including the anterior and posterior default-mode, temporo-parietal, occipital, sensorimotor, frontal and fronto-temporal circuits. Interestingly, we observed a gender-related difference, with boys and girls spending more time in default-mode-like and fronto-temporal BSs, respectively. Furthermore, we found that a higher probability of transitioning into fronto-temporal states was associated with better scores in questionnaires assessing executive functioning in everyday life, behavioral difficulties and emotion regulation abilities. These findings highlight the importance of resting-state brain dynamics as functional scaffolds for behavior and cognition and suggest new methodological tools for assessing individual neurocognitive differences in typical and potentially atypical development.

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Mini-talks: LIFE CYCLE / 64

Measuring Subjective Vitality and Depletion in older people from a SDT perspective: a dual country study

Authors: James Dawe[1]; Andrea Chirico[1]; Tommaso Palombi[1]; Fabio Lucidi[1]

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As the global elderly population grows research increasingly focuses on their well-being and quality of life, aspects that are often impacted by a perceived loss of energy and fatigue. To describe individuals' energy dynamics, Self-Determination Theory (SDT) recently proposed a dual-process model based on two constructs: Subjective Vitality and Depletion. The present study aims to validate the Subjective Vitality/Depletion Scale (SVDS), an SDT instrument based on this model. A sample of 726 older adults (over 65) from two countries USA and Italy (343 USA and 383 Italy; 51.1% females; age range = 65 - 95 years; Mage = 72.57, SDage = 6.49) completed the SVDS, the Big Five Inventory 2 –Extra Short Form (BFI-2-XS), and the 12-item Short Form Health Survey (SF-12). Confirmatory factor analyses of the SVDS support the SDT hypothesis that Subjective Vitality and Depletion are two distinct, yet related constructs. Full measurement invariance for the scale was achieved across gender and age subgroups, while partial scalar invariance was established across different countries, suggesting some specific influence of cultural factors. Correlations with BFI-2-XS and SF-12 support the SVDS convergent, discriminant, and nomological validity.
In conclusion, we provided evidence that the SVDS based on SDT is a valid and reliable instrument for assessing Subjective Vitality and Depletion among the elderly. Vitality and Depletion appear to be constructs that are conceptualized and interpreted consistently across elders with diverse characteristics and cultures.

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Mini-talks: LANGUAGE / 282

Don't stop the scientific flow from data collection to Born-Open Data: Sentence parsing and repetition with the Maze Task

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The present study builds on the Maze Task, a recent experimental paradigm particularly useful to study sentence processing with minimal spillover effects. Specifically, in our study, we explore how linguistic violations interact with sentence repetition. The structure of each sentence used in the study included seven words forming a transitive sentence followed by a prepositional phrase. The study design included three conditions: correct sentences, sentences with semantic violations, and sentences with syntactic violations between determiners and nouns. We conducted online experiments with 12 participants, utilizing a Latin square design for 36 trials per condition. Each trial consisted of a two-phase process: initial non-incremental self-paced reading followed by a repetition phase within the Maze Task, where participants repeated the sentence verbatim while non-words served as distractors. This maze procedure was repeated five times per sentence. Preliminary results, including error rates and reaction times, showed high mean accuracy (approximately 98%), which likely excluded any speed-accuracy trade-offs. Analysis using generalized linear mixed-effects models indicated increasing reaction times with more repetitions, markedly with semantic violations at the subject level. These initial findings highlight the Maze Task's potential to inform about how parsing affects working and short-term memory during sentence repetition. Our preliminary results challenges the hypothesis that repetition facilitates learning. Importantly, the present study capitalize on open-source tools and practices, ensuring compliance with Open Science standards implementing Born-Open data, and code available on GitHub to reproduce the task.

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Mini-talks: LANGUAGE / 329

Accessible reading assessment: the Italian adaptation of self-administered, open-access ROAR (Rapid Online Assessment of Reading)

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The number of 10-year-old boys and girls with reading comprehension difficulties increased from 57% in 2019 to about 70% in 2022 in low- and middle-income countries according to the World Bank. The effects of this literacy crisis have been worsened by the COVID-19 pandemic, which has increased learning deficits and social disparities (Betthäuser, Bach-Mortensen & Engzell, 2023). Effective and accessible assessment tools are crucial to help reduce the current crisis related to low literacy levels in Italy where, during the pandemic, Italian second-grade pupils reported a loss of half their annual academic performance (Contini et al. 2022).
The Rapid Online Assessment of Reading (ROAR, https://roar.stanford.edu) is an efficient and reliable measure of reading abilities (Gijbels et al., 2023; Ma et al., 2023; Yeatman et al., 2021), approximating in-person standardized tests with high accuracy (r=0.94). This open-access online platform can be flexibly adapted into other languages, and several adaptations are ongoing.
We present the Italian adaptation of the Lexical Decision (LD) task of the ROAR. The task, which is embedded in a fun, animated story to ensure maximal engagement, is a forced choice LD task with words and pseudowords adhering to Italian phonotactic properties. The adaptation is currently being validated on adults and primary school children aged 6-11.
The creation of an open-access, freely available, and multilingual assessment tool which can be accessed from different countries through a unique web app is a practical alternative to resource-intensive, in-person reading assessments for both educational and research purposes.

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Mini-talks: EMOTION (1) / 96

Ridurre il Photo-Investment in giovani donne adulte: analisi dell' efficacia di un intervento breve online di Self-Compassion

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Contesto: L'uso dei social media ha un impatto importante sull'immagine corporea dei giovani adulti e sull'investimento emotivo legato alla pubblicazione delle proprie foto online. Il Photo Investment (PI), in particolare, è il costrutto che descrive la preoccupazione personale per la qualità e la rappresentazione delle proprie foto sui social media, spesso associata a confronto sociale e insoddisfazione corporea.
Obiettivi: questo studio esplora l'efficacia di un intervento breve online di potenziamento della Self-Compassion (SC) - la pratica rivolgersi a sè stessi con gentilezza e accettazione, piuttosto che autogiudicarsi e auto-criticarsi - per migliorare i livelli di SC e ridurre il PI in un campione di giovani donne adulte (range 18-30 anni).
Metodo: E'stato condotto uno studio randomizzato controllato: intervento di SC online della durata di 3 settimane (N=28) vs waiting list (N=25). Ogni settimana, le partecipanti hanno completato una

meditazione e un esercizio di SC (settimana 1: gentilezza verso di sè; settimana 2: consapevolezza dell'umanità comune; settimana 3: mindfulness). Sono stati proposti dei questionari online a T0 (baseline) e T1 (post intervento) per valutare i cambiamenti nei livelli di SC e PI nei due gruppi.
Risultati: L'ANOVA a misure ripetute ha mostrato un aumento significativo della SC e una diminuzione significativa del PI nel gruppo che ha partecipato all'intervento online rispetto al gruppo di controllo.
Conclusioni: I risultati evidenziano il potenziale degli interventi di SC brevi online per promuovere l'accettazione di sé nelle giovani donne adulte e diminuire la preoccupazione emotiva associata alla pubblicazione delle proprie immagini sui social media.

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Mini-talks: ACTION & MOTION (1) / 306

Action prediction is facilitated by contextual cues in children with cerebral palsy but not in children with developmental coordination disorder

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Understanding others' actions entails the use of internal motor models. Recent findings demonstrated that children with Developmental Coordination Disorder (DCD), as those with Cerebral Palsy (CP), both characterized by the presence of difficulties in performing and learning movements, also display anticipatory planning deficits. However, while DCD children do not use pre-cue information to refine their actions, CP children seem to benefit from contextual cues to adjust their performance. Here, we studied whether this difference in action execution is mirrored during action perception. In particular, we tested whether, compared to typical development peers (TD), DCD and CP benefit from contextual priors in predicting the unfolding of social (actions) or nonsocial (moving shapes) events. Results showed TD were facilitated by contextual priors in both prediction tasks, and the same effects were obtained for CP, despite their extensive motor deficits. Conversely, DCD benefitted from contextual priors only in the non-social task, but not in the social prediction task. These results suggest that anticipatory action planning in DCD is not merely due to a general blindness to contextual changes (since they used contextual priors in the non-social task) or to low-level kinematic alterations (since CP did not alter context-based predictions in either task). They rather support a general action prediction deficit in DCD individuals that prevents them to anticipate and adapt their motor execution and perception to environmental changes. By showing different sensitivity to contextual priors, these results would suggest differentiated intervention strategies in DCD and CP patients.

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Mini-talks: ATTENTION (1) / 433

Parietal tACS coupled with a visuo-attentional training improves lexical access and working memory in dyslexia

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Developmental Dyslexia (DD) is a neurodevelopmental disorder characterized by both auditory-phonological and visual-attentional deficits. This study aimed at investigating the cumulative impact of transcranial alternating current stimulation (tACS) and visual-attentional reading training. tACS was applied to parietal sites, bilaterally at beta frequency (18 Hz), to improve the magnocellular-dorsal (M-D) stream functionality and the capability of ventral stream areas of identifying visual word structures.
All participants were adults with DD diagnosis. They were divided into three groups (N = 37). The first group completed 12 sessions of a reading acceleration training (RAP) while receiving tACS stimulation; the second and third groups underwent a sham stimulation in combination with RAP and phonological training, respectively. Before and after the training sessions, participants were asked to judge the lexicality of written words and pseudo-words while EEG was recorded.
N400 and P600 ERP components were modulated in all groups as a function of the session. Specifically, when comparing groups that underwent RAP training, ERPs reflect a less effortful lexical and semantic categorization post training in the tACS group. Coherently, we observed an improvement in working memory capacity, as assessed by the digit span test only in the tACS group. As for time-frequency data, we expect a decrease in frontal theta band, reflecting working memory load and a decrease in alpha power in temporo-parietal regions, reflecting semantic encoding. Taken together, our results suggest that combining tACS and visual-attentional reading training leads toward a more efficient lexical/semantic categorization, supported by a general improvement in working memory.

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Mini-talks: LIFE CYCLE / 277

La capacità di risolvere problemi insieme: primi risultati di un training web-based collaborativo con anziani sani

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Le abilità di problem solving sono essenziali per fronteggiare situazioni critiche nella vita di tutti i giorni e possono avere un ruolo cruciale nel promuovere l'invecchiamento attivo.
Qualsiasi compito che richieda attività di pianificazione, organizzazione, gestione del tempo e flessibilità di pensiero potrebbe essere particolarmente stimolante per le persone anziane; soprattutto se aderente alla realtà quotidiana.
SWIFT (Shared, Web-based, Intelligent Flexible Thinking Training) è uno strumento di training cognitivo web-based che si propone di allenare le competenze di problem solving delle persone anziane, simulando uno scenario di vita reale. Ai partecipanti viene chiesto di pianificare una vacanza di due giorni nella città di Roma attenendosi a degli obiettivi specifici (e.g., visitare specifici luoghi di attrazione, rispettare il budget).
SWIFT permette l'organizzazione di sessioni di training collaborativo: i membri del gruppo discutono e decidono insieme come organizzare il loro viaggio.
La possibilità di poter svolgere un training collaborativo è rilevante: esiste un'ampia letteratura sull' influenza positiva che la stimolazione e il supporto sociale possono avere sul potenziamento delle funzioni cognitive.
È stato condotto uno studio per una prima validazione della versione collaborativa di SWIFT, che ha coinvolto un gruppo di anziani sani con un'età compresa fra 65 e 85 anni.
Obiettivi: (1) individuare le potenzialità e criticità di un problem solving collaborativo per anziani; (2) esaminare gli effetti a breve termine del training collaborativo proposto.
*Questo studio è supportato dalla Velux Stiftung Foundation.

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Mini-talks: ACTION & MOTION (1) / 344

Assessing the effects of transcutaneous Vagus Nerve Stimulation on motor activation and inhibition

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Transcutaneous Vagus Nerve stimulation (tVNS) has been proposed as a prospective treatment for clinical conditions with altered GABAergic neurotransmission. Several studies demonstrated that tVNS can improve, at least at behavioural level, participants'performance in inhibitory control tasks, supposedly mediated by GABA neurotransmission. However, the neurophysiological evidence showing its effects on GABA-mediated inhibition in the motor cortex is still limited. Here, we aim to investigate the effect of active (vs. sham) tVNS on corticospinal excitability and cortical inhibition as assessed through single and paired-pulse Transcranial Magnetic Stimulation.
Left-ear tVNS was delivered while participants performed a computerized visuo-motor task. In a baseline condition and after delivering tVNS, excitatory and inhibitory (GABA-A and GABA-B mediated) indices were assessed from the left (ipsilateral to tVNS) or the right (contralateral to tVNS) motor cortex.

Preliminary results revealed a facilitatory effect on visuomotor task performance during active vs. sham tVNS. Moreover, we found a specific increase after active compared to sham tVNS of intracortical inhibition mechanism mainly mediated by GABA-A receptors, either in the left or the right motor cortex. The study provides supportive evidence for the application of tVNS as an alternative, non-invasive and coadjuvant treatment for disorders featured by altered inhibitory mechanisms.

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Mini-talks: ATTENTION (1) / 297

Behavioral and electrophysiological signatures of Perceptual Bias in line length estimation

Author: Giorgia Parisi[1]

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The Landmark task constitutes one of the most effective behavioral tasks in visuospatial perception, detecting a distortion of space perception known as Perceptual Bias (PB). This study intended to highlight the behavioral and neural basis of PB by administering the Landmark task while concurrently recording EEG.
A computerized Landmark task was administered to thirty-seven healthy participants. They had to report the longest or the shortest of the two segments of pre-bisected horizontal lines that could be symmetrically (i.e., Critical stimuli) or asymmetrically (i.e., Control stimuli) bisected. EEG signal was recorded throughout the experiment.
Three possible PB values could be extracted from Critical trials: 50% ± 5 (i.e., no bias), higher than 55% (i.e., "neglect-like"bias), and lower than 45% (i.e., "pseudoneglect"bias).
Despite high inter-individual variability, participants behaviorally manifested a "pseudoneglect"bias (mean 43.93%), in accordance with the current literature. From the electrophysiological standpoint, pairwise comparisons between Critical vs. Control trials showed a significant difference in the N2 and P3 components' time windows (i.e., higher in Control than in Critical trials). The N2 result could represent content-specific awareness due to the perceptual difference provided by Control trials only. Consequently, the P3 finding could be related to a stronger post-perceptual decision-making process performed on Control trials.
Finally, a positive correlation between PB and the P2 peak amplitude was found, suggesting that PB takes place at this stage of visual processing, prodromic to the generation of a feature-integrated content of perceptual awareness.

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Mini-talks: EMOTION (1) / 205

Self-disclosure e intimità percepita: uno studio sperimentale di confronto tra interazioni virtuali e face-to-face

Authors: Anna Flavia Di Natale[1]; Giulia Cremaschi[2]; Fabio Frisone[2]; Giuseppe Riva[None]; Daniela Villani[2]

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Contesto: Le piattaforme sociali in realtà virtuale (PS-VR) come Engage VR offrono diversi vantaggi in contesti terapeutici, poiché favoriscono un forte senso di presenza e una interazione naturale, offrendo, al contempo, un significativo livello di anonimato grazie alla possibilità di rappresentare sé stessi attraverso avatar, rimuovendo la dimensione del proprio corpo e dell'aspetto fisico dall'interazione. Questo potrebbe portare gli utenti a sentirsi più liberi dalle inibizioni che possono emergere nelle interazioni faccia a faccia e facilitare una comunicazione più autentica e aperta, specialmente quando vengono trattati temi sensibili.
Obiettivo: Lo studio confronta i livelli di auto-rivelazione (self-disclosure) e la percezione di intimità con l'interlocutore in un compito sperimentale di interazione tramite PS-VR vs faccia a faccia.
Metodo: Utilizzando un disegno entro-soggetti, i partecipanti descrivono ricordi positivi evocati da parole stimolo (neutre, legate al corpo, legate al cibo) nelle due condizioni (PS-VR e faccia a faccia). Al termine di ogni sessione, compilano questionari per misurare la self-disclosure e la percezione di intimità con l'interlocutore.
Risultati: I dati preliminari raccolti su un campione di 24 giovani donne adulte sane mostrano che la self-disclosure e la vicinanza sono inferiori nelle sessioni PS-VR rispetto a quelle faccia a faccia. Tuttavia, quando viene controllato il livello di apprezzamento corporeo delle partecipanti, la differenza nella percezione di vicinanza scompare.
Conclusione: I risultati preliminari necessitano di ulteriori conferme e possono essere intrepretati alla luce di aspetti del paradigma sperimentale utilizzato.

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Mini-talks: LANGUAGE / 368

Alpha power reflects next word prediction of continuous speech.

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Human brain employs sensory inputs to predicts future events 1. Research has delved into linguistic expectations and alpha oscillations (8-12Hz), where alpha power modulation was linked to anticipatory mechanisms 2. Studies that manipulated contextual constraint revealed stronger predictions associated with lower pre-stimulus alpha power than weaker predictions 3. Yet, such results could reflect specific processes of the controlled manipulations. Here, we investigated the alpha power fluctuation in a naturalistic comprehension context. We recorded cortical activity of 25 English participants who listened to 45 minutes stories in English. Each words was assigned entropy values

(GPT-2 extracted) and split into two conditions depending on contextual constraint (low entropy = predictable; high entropy = unpredictable). We built a linear mapping model between the words' entropy and the brain signals. On this, we calculated alpha power in the time window preceding (-300ms–0ms) and following (0ms–300ms) word onsets. Results showed that, in contrast with previous research, alpha power was greater in the low entropy than the high entropy condition, with larger difference in the pre-onset time-window than the following window. This confirms that alpha power modulation reflects anticipatory mechanisms but the effect depends on the task manipulation. In task that do not prompt prediction (simple comprehension), high alpha power reflect automatic word expectation. Conversely, when words are not predictable (same context), expectation update is likely paused, leading to a decrease in alpha power.

1 Clark et al., (2013). Behavioral and Brain Sciences.
2 Gastaldon et al., (2020). Cortex.
3 Lago et al., (2023). Psychophysiology.

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Mini-talks: LIFE CYCLE / 152

A systematic review and meta-analysis on the effectiveness of cognitive interventions in healthy ageing

Author: Sara Pegoraro[1]

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Even when healthy, ageing is associated with a gradual and unavoidable decline in various cognitive functions. These cognitive changes affect older adults' quality of life, well-being, and life expectancy, causing significant welfare political implications worldwide. In this context, cognitive training and stimulation have become valuable interventions to prevent age-related cognitive decline in healthy elderly.
This systematic review and meta-analysis aimed to outline different available instruments of cognitive intervention and to quantify their effectiveness for cognitively healthy elderly.
Pubmed, Scopus, and Web of Science online databases were searched for eligible studies on cognitive interventions for cognitively healthy older adults (age >60). We screened 297 studies. Interventions were single- or multi-domain cognitive training or stimulation, administered individually or in groups, in presence or at a distance, technology-, paper-and-pencil-, or music-based. We considered cognitive outcomes assessed by standardised neuropsychological screening tests before and immediately post-intervention, compared with an active or passive control group. The presence of a follow-up assessment was also investigated.
The analysis revealed the presence of two influential points and no outliers. The estimated overall effect size was 0.25 (95% CI = [0.08, 0.42]). The omnibus test of model coefficients was significant ($p < 0.001$), while the test for residual heterogeneity resulted as not significant ($p = 0.371$), so homogeneity between studies can be assumed.
Our preliminary results suggest the effectiveness of cognitive interventions, compared to control group activities, in enhancing global cognitive functioning in the healthy elderly population.

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Mini-talks: EMOTION (1) / 295

Satiety and food availability influence motivational and inhibitory responses towards food stimuli: a behavioural study in healthy weight participants

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In this study, we investigated the influence of appetite on automatic approach tendencies and inhibitory responses toward food stimuli and whether this effect is modulated by the actual availability of food.
Forty-three healthy weight participants (21 males) completed an approach-avoidance paradigm aimed at assessing the approach bias for food and a Go/No-Go task aimed at assessing behavioural inhibition with personalized food pictures. Participants performed the tasks in two conditions: after prolonged fasting (hunger), and after lunch (satiety). Two versions of each task were administered: one with pictures of foods that were available for actual consumption after the experiment, and one with foods that were unavailable for consumption. After task performance, the most liked high-calorie and low-calorie foods were offered, and food intake was measured.
Approach-Avoidance paradigm: we observed lower approach bias for high-calorie and low-calorie foods in the satiety vs. hunger condition, but only for unavailable foods.
Go/No-Go task: we observed no significant effect of satiety on behavioural inhibition. However, participants showed greater inhibitory capacity in response to high-calorie vs. low-calorie foods, but only for those available for immediate consumption.
After the experiment, participants ate more calories in the fasting condition, and a greater proportion of calories from low-calorie foods.
Our results suggest that satiety fails to down-regulate the approach tendencies for food when it is available for immediate consumption. This failure seems compensated by a greater behavioural inhibition toward high-calorie vs low-calorie foods that is selective for those available for immediate consumption.

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Mini-talks: ATTENTION (1) / 208

Auto-Global Examination of Mental State (Auto-GEMS): A web-based, self-administered cognitive screening standardized for Italy

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Recent methodological developments have contributed to a significant advance in computerised neuropsychological instruments and procedures, including those accessible through web-based platforms. We recently developed Auto-GEMS, an open-access, web-based, self-administered screening test in Italian. It allows a quick assessment of an individual's cognitive state and cognitive reserve. Auto-GEMS measures cognitive functioning by using eleven items similarly to the remote (phone or video-call) version (Tele-GEMS) and to the in-person paper and pencil version (GEMS) of the same screening. We collected normative data on a large sample of 1308 participants (age range 18-93), which were then used to investigate psychometric properties and regression models on demographic variables to derive clinical cut-offs. The psychometric properties of Auto-GEMS have shown good internal consistency, test-retest reliability and convergent validity. This short and user-friendly tool has a number of potential applications. For instance, it can be useful in clinical practice to monitor the cognitive profile of patients or vulnerable individuals, but it can also be used in research studies for screening participants. The testing materials and the data collected are freely available on the Internet along with a web app to visualise the test outcome in comparison with the normative data.

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Mini-talks: ACTION & MOTION (1) / 374

The impact of 'motor distance' on action understanding: how motor similarities guide our comprehension of others

Author: Camilla Maronati[1]

Co-authors: Francesca Patarini [2]; Jlenia Toppi [2]; Jordi Manuello [3]; Elisabetta Ferrari [4]; Cristina Iani [5]; Sandro Rubichi [4]; Angela Ciaramidaro [4]; Laura Astolfi [6]; Andrea Cavallo [3]

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Research on movement kinematics has demonstrated that observers can understand actions' outcome only by looking at the reach-to-grasp phase of a movement directed to an object. However, it remains unclear the extent to which the kinematic similarity between the observer and the agent affects the ability of reading the action and how such similarity reflects on neural signals. We combined motion capture technologies with video recording to acquire a dataset of reach-to-grasp actions, directed to objects with different weights (light/heavy), executed by 90 different participants. We used the Procrustes transformation to compute the motor distance between movements and agents. In two subsequent behavioral and electrophysiological (EEG) action-observation tasks, we presented observers, who had previously performed the action execution task, with 240 videoclips, and manipulated the motor distance between their movement kinematics and those presented in the videos. Observers were asked to carefully watch the reach-to-grasp phase of the action and to classify the target objects' weight. The ANOVA confirmed that observers were more accurate ($F(1,19) = 4.976$; $p < 0.05$) and faster ($F(1,19) = 22.883$; $p < 0.001$) in understanding actions characterized by a smaller motor distance (i.e., with a more similar movement kinematics) from them. This result is suggesting that the ability to comprehend the outcome of observed actions depends on motor similarities between observers and agents. We will also present results from the EEG analysis, which has been carried out with the purpose of investigating the relationship between motor distance and desynchronizations in the beta band.

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Mini-talks: LANGUAGE / 380

How early life sensory experience affects the hierarchy of speech processing

Author: Alessandra Federici[1]

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Language acquisition relies on environmental stimulations during sensitive periods. Native phonemes categorisation is acquired according to sensory experience during the first year of life. However, in case of congenital deafness, infants can rely only on visual input. Thus, they cannot distinguish consonant couples discernible only by acoustic properties such as *b* and *p*. By testing children with cochlear implants (CIs), we assessed whether early auditory experience is needed to encode specific phonemic features. Using EEG, we measured the neural response to continuous speech processing in 37 hearing children (HC) and 32 CI children, half with congenital deafness (CD) and half with acquired deafness (AD). Only CD participants were auditory deprived during the first year of life. We employed multivariate lagged regression to estimate single participants encoding model and predict EEG based on a selection of stimulus features: *sound envelope*, *phoneme onset*, and, selectively for

consonants with the same visual features (manner and place), *voicing*. Preliminary results suggest that while all groups similarly benefited from *phoneme onset* information, *voicing* processing was affected by the lack of auditory input in the first year of life. *Voicing* improved the model to predict neural activity in both HC and AD but not in CD group, which had lower *voicing* gain compared to HC.
Data showed that low-level information associated with all types of phoneme onsets is encoded independently of groups'auditory experience. Conversely, encoding higher-level acoustic information displays a sensitive period in the first year of life in which functional hearing must be available.

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Mini-talks: LIFE CYCLE / 182

Dream recall and content in Rapid Eye Movement (REM) Sleep Behavior Disorder patients

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INTRODUCTION: Previous work suggested that idiopathic REM Sleep Behavior Disorder (iRBD) may be associated with alterations in dream content, including more aggression as compared to healthy control (HC) individuals, and in dream recall frequency (DRF; *i.e.*, the number of dreams recalled in a given timespan). However, several studies failed to replicate these findings, questioning their reliability. Aim of our study was to explore potential differences in DRF and dream content between iRBD and HC participants.
METHODS: Participants (iRBD=15, HC=15) filled out retrospective questionnaires assessing their Attitude Towards Dreams (ATD), DRF, nightmare frequency, and aggressiveness, affective valence, and arousal of dreams in the previous three months. Subsequently, participants wore an actigraph and recorded a report of their last dream experience each morning upon awakening for two weeks. Afterward, reports were classified as either contentful dreams, dreams without recall of content, or no dreams.
RESULTS: Retrospective measures highlighted higher aggressive contents in iRBDs compared to HCs ($p<0.01$), while no differences were found in nightmare frequency, affective valence, or arousal. Retrospective and report-based DRF measures identified no between-group difference. However, our iRBD sample showed lower ATD scores in comparison to HCs ($p<0.01$). Such a difference may represent a relevant confound, as previous work demonstrated a strong correlation between ATD and DRF.
CONCLUSIONS: Our study provides further evidence supporting dream content alterations in iRBD. Future dream content textual analyses will allow us to detect and quantify specific indices characterizing iRBD dreams, investigating their possible correlation with individual symptoms.

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Mini-talks: EMOTION (1) / 428

Stimoli visivi ed empatia: valutazione delle risposte emozionali e prosociali a fotografie di pericolo percepito

Authors: Beatrice Tosti[1]; Giuseppe Spica[2]; Pierluigi Diotaiuti[2]; Stefania Mancone[2]; Stefano Corrado[3]

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Questa ricerca indaga le dinamiche dell'empatia umana attraverso un innovativo studio sperimentale che utilizza fotografie per esplorare le reazioni empatiche di fronte al pericolo percepito. Le immagini presentate ritraggono individui di diverse età e background culturali in contesti che suggeriscono situazioni di potenziale pericolo, mirando a sollecitare una vasta gamma di risposte emotive e comportamentali. I partecipanti hanno risposto a questionari basati sull'Indice di Reattività Interpersonale (IRI) e su altre scale psicometriche, come la Scala di Alessitimia di Toronto (TAS) e la nuova scala di Comportamento Prosociale (NPB), per quantificare il loro coinvolgimento emotivo e la propensione a intervenire. La metodologia sperimentale, arricchita dall'uso di stimoli visivi accuratamente selezionati per la loro rilevanza culturale e situazionale, ha permesso un'analisi dettagliata attraverso varie lenti sociali e personali. I risultati evidenziano marcante differenze di genere nelle risposte empatiche, con le donne che tendono a manifestare maggiore sensibilità e preoccupazione nei confronti degli altri. Inoltre, l'analisi suggerisce che le dinamiche familiari, come la presenza o l'assenza di fratelli, modulano significativamente le capacità empatiche degli individui, influenzando la loro reattività e comportamenti prosociali in scenari di emergenza. Questo studio evidenzia come la predisposizione all'aiuto possa essere influenzata da variabili personali e contestuali, e dimostra l'efficacia degli stimoli visivi nell'indurre e misurare tali risposte in modo controllato e replicabile.

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Mini-talks: LIFE CYCLE / 265

What role does sleep play in the development of cognitive reserve? A systematic review on the effects of sleep modulation in animal models

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Individuals' responses to aging or neuropathological insults vary due to factors affecting the central nervous system's structure and function. Cognitive reserve, shaped by life experiences, helps protect the brain from neuronal damage. Modifiable lifestyle factors like sleep can enhance cognitive reserve, counteracting age- or disease-related brain changes. Sleep impacts cognitive domains, and sleep disruptions or disorders could pose neurodegenerative risks. The present work explores how positive or negative sleep modulations affect cognitive functions and neuromorphological mechanisms in rodents, aiming to understand its role in cognitive/brain reserve development.
The systematic review, performed according to PRISMA-P guidelines, was registered on Prospero (Registration ID: CRD42023423901). All articles published until June 2022 were considered and the search was performed on four databases: Pubmed, Scopus, Web of Science, and Embase. The search strategy utilized terms related to sleep, rodents, and cognitive functions.
Out of the 28,666 articles found on databases, 142 met the inclusion criteria.
The data, divided by species (mouse/rat), were analyzed based on cognitive domains (learning, memory, executive functions, and attention) and sleep manipulation types (REM, total, or circadian alteration, with enrichment or deprivation), and duration (acute or chronic).
Data revealed a significant cognitive decline after sleep deprivation, particularly in the memory domain, while other domains exhibited varied results. Regarding this, limited studies on REM sleep enrichment via medication hinted at enhanced memory performance. These findings confirm that sleep modulation affects cognitive and neuromorphological processes, underscoring the importance of sleep as a critical factor in modulating brain/cognitive reserve.

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Mini-talks: ACTION & MOTION (1) / 392

A tale of two limbs: Towards a unified motor fingerprint across whole-body movements

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Research on human motor behavior has extensively investigated the kinematics of both upper and lower limb. However, these two districts where often considered separately. Consequently, while it is well known that movements performed with either arms or legs exhibit highly variable motor implementation, the study of their potential covariation effects remains basically neglected. To fill this gap, a combined analysis of motor variability of the upper and lower limb was carried out. 16 healthy subjects completed a pointing task, vertical extensions of the dominant arm, and self-paced walking on dual-belt treadmill, while kinematics was recorded through optoelectronic cameras. Upper limb movement was described through shoulder elevation angle, angular velocities of flexion/extension of the elbow, and angular velocities of flexion/extension of the wrist. Lower limb movement was described through the angular velocities of flexion/extension of the hips, knees and ankles. The Procrustes transformation was then used to compute distance between movements (separately for

upper and lower limb), and results served as input for (two separate) 2-dimensional Multidimensional scaling. Finally, the space of variability of each subject was quantified as the amount of the bi-dimensional space covered by the executed movements, separately for the limbs, and enclosed by an ellipse. Results indicate positive correlation effect ($p<0.05$) between the space of variability measured for the upper and the lower limb of each subject. These results may indicate the presence of common sources of variability both for upper and lower limb movements, in turn providing support for the existence of coherent individual motor fingerprint.

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Mini-talks: ATTENTION (1) / 138

Prismatic adaptation coupled with cognitive training as novel treatment for developmental dyslexia: a randomized controlled trial

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Despite intense and costly treatments, developmental dyslexia (DD) often persists into adulthood. Several brain skills unrelated to speech sound processing (i.e., phonology), including the spatial distribution of visual attention, are abnormal in DD and may represent possible treatment targets. This study investigates the efficacy in DD of rightward prismatic adaptation (rPA), a visuomotor adaptation technique that enables visual-attentive recalibration through shifts in the visual field induced by prismatic goggles. A digital intervention of rPA plus cognitive training was delivered weekly over 10 weeks to adolescents with DD (aged 13–17) assigned either to treatment (N = 35) or waitlist (N = 35) group. We observe a high compliance to treatment. Efficacy was evaluated by repeated measures MANOVA assessing changes in working memory index (WMI), processing speed index (PSI), text reading speed, and words/ pseudowords reading accuracy. rPA treatment was significantly more effective than waitlist ($p \leq 0.001$; $\eta p2 = 0.815$). WMI, PSI, and reading speed increased in the intervention group only ($p \leq 0.001$, $\eta p2 = 0.67$; $p \leq 0.001$, $\eta p2 = 0.58$; $p \leq 0.001$, $\eta p2 = 0.29$, respectively). Although modest change was detected for words and pseudowords accuracy in the waitlist group only (words: $p \leq 0.001$, $d = 0.17$, pseudowords: $p = 0.028$; $d = 0.27$), between-group differences were non-significant. This is the first study to evaluate the efficacy PA coupled with cognitive training for the non-phonological treatment of cognitive and reading abilities in adolescents with DD. This innovative approach could have implications for early remedial treatment.

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Mini-talks: LANGUAGE / 396

Neural synchronization with audiovisual speech relies on a sensitive period

Author: marta fantoni[1]

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Proper sensory inputs at specific time windows are fundamental for shaping infants'development (Werker, Hensch, 2015). Temporary auditory deprivation in the first year of life can alter the ability to integrate audiovisual speech cues even if hearing is restored with cochlear implants (CI; Schorr et al., 2005).
Yet, it's unclear if neural circuitries responsible for audiovisual speech integration have a developmentally sensitive period in which auditory information is required. To investigate this issue, we measured the neural tracking of speech sound envelope (auditory-only) and associated lip movements (audiovisual) with EEG in children with congenital (CD) or acquired (AD) deafness and in hearing controls (HC). Because CD and AD groups crucially differed in their lack or presence of functional hearing in the first year of life, this allowed assessing the role of auditory experience within this phase of brain development.
Overall, lip-movement tracking was more evident in CI than in HC. Neural tracking benefited from audiovisual compared to auditory-only speech in HC and AD. The sound envelope tracking was anticipated when the speaker's face was visible at short timescales, ~30 –150 ms, indicative of early processing. This facilitatory effect was absent in the CD group, revealing that early acoustic deprivation hindered fast audiovisual integration. However, AD and CD groups showed comparable speech comprehension enhancements with audiovisual speech, highlighting that neural adaptations to different deafness onsets can lead to similar behavioral outcomes. Hence, early acoustic experience is fundamental for developing neural circuitries subtending automatic integration of low-level audiovisual speech signals.

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Mini-talks: EMOTION (1) / 389

EFFETTO FRAMING E PROMOZIONE DELL'ALLATTAMENTO MATERNO: IL RUOLO DELL'AUTOEFFICACIA, DELLE EMOZIONI E DELL'ACCETTAZIONE DELLE INFORMAZIONI

Authors: Giulia Scaglioni[1]; Nicoletta Cavazza[1]; Margherita Guidetti[1]

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Nell'ambito dei comportamenti legati alla salute, il frame di perdita è più efficace nel promuovere comportamenti di rilevamento (come gli screening), mentre il frame di guadagno è più efficace nel promuovere comportamenti di prevenzione (come l'igiene orale).
In uno studio sperimentale preregistrato abbiamo testato l'effetto framing di una comunicazione che promuove l'allattamento materno (comportamento di prevenzione) sugli atteggiamenti e sulle intenzioni di allattare e di usare latte formulato, il ruolo di mediazione delle emozioni e dell'accettazione delle informazioni e il ruolo di moderazione dell'auto-efficacia.
Le partecipanti erano donne in gravidanza (N = 282), assegnate casualmente a tre condizioni in cui leggevano messaggi sui benefici dell'allattamento (guadagno), sui rischi del non allattamento (perdita) o curiosità sugli animali (controllo).
Come ipotizzato, i risultati hanno mostrato due effetti condizionali indiretti speculari sulle intenzioni di allattare e usare la formula: i messaggi inquadrati in termini di perdita hanno indotto emozioni negative e quindi hanno ridotto l'accettazione delle informazioni, che a sua volta ha peggiorato atteggiamenti e intenzioni di allattare e migliorato atteggiamenti e intenzioni di usare latte artificiale. D'altra parte, i messaggi con cornice di guadagno hanno indotto emozioni positive e quindi promosso l'accettazione delle informazioni, che a sua volta ha migliorato atteggiamenti e intenzioni di allattare e peggiorato atteggiamenti e intenzioni di usare latte artificiale. Inoltre, alti livelli di autoefficacia hanno attenuato gli effetti negativi della cornice di perdita e hanno potenziato gli effetti positivi della cornice di guadagno.
Una promozione efficace dell'allattamento materno dovrebbe quindi essere inquadrata in termini di benefici.

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Mini-talks: ATTENTION (1) / 316

The involvement of extra-striate areas in conscious vision as a function of response requirements: a Fast Optical Imaging investigation

Author: Elisabetta Colombari[1]

Co-authors: Giorgia Parisi [1]; Sonia Mele [1]; Chiara Mazzi [1]; Silvia Savazzi [1]

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One of the major challenges of consciousness research is represented by the identification of the brain areas responsible for the emergence of visual awareness. In this framework, the present study aims at unravelling the spatio-temporal dynamics underlying conscious vision, disentangling them from confounding post-perceptual processing related to the response. To this goal, we employed a peculiar experimental design in which both awareness and motor response are manipulated. Specifically, participants performed a GO/NOGO detection task, in which they were asked to respond or withhold responding according to the experimental condition. Critically, during the performance of the task, participants'brain activity was recorded by means of Event-Related Optical Signal (EROS) technique, which provides accurate information about brain functions both from the temporal and spatial point of view, simultaneously. Results obtained from a small sample serving as a pilot for a registered report recently submitted showed that the Lateral Occipital Complex (LOC) plays a crucial role in conscious vision independently from the response requirement. In contrast, activity in primary visual cortex (V1) characterized the conscious condition only when the response was required. In general, these results advocate for a central role of LOC in conscious vision, suggesting that it could represent a reliable neural correlate of visual awareness, as opposed to V1, whose activity seems to be related to post-perceptual processes involved in the requirement of report.

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Mini-talks: ACTION & MOTION (1) / 399

Unravelling the role of the insula in apraxia: A systematic review of VLSM studies in stroke patients

Author: Angelica Scuderi[1]

Co-authors: Francesca Favieri [2]; Erik Leemhuis [3]; Mariella Pazzaglia [4]

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Apraxia refers to a variety of higher-order motor disorders not primarily caused by motor, sensory or cognitive impairment. Evaluation of apraxia typically involves gestural imitation, pantomime, and actual tool use. Lesion studies correlate the ability of movement control to cortical areas such as the inferior frontal gyrus, inferior parietal, and temporal lobes. Apraxia-related lesions often extend to subcortical regions, white matter, and the insula. Despite its involvement in several cognitive and sensorimotor-related processes, the insula's role in gesture execution remains unclear. Functional imaging revealed a role of the left anterior insula in tool recognition and object use. Individual experimental studies fail to explain the involvement of the insula in praxic abilities, however involvement of the right insula during gesture imitation was documented. Stroke affecting the middle cerebral artery frequently damages the insula, suggesting its secondary role in apraxia. We conducted a systematic review of studies in apraxic stroke patients which used VLSM. 31 of the papers identified through keyword searches met inclusion criteria. Consistent with the literature, most of the selected studies identify apraxia as a typical syndrome of LBD. The left insula has been found to be one of the most frequently impaired areas in patients who manifested apraxia after a stroke, particularly when assessed with pantomime and imitation tasks. Although the role of the insula is not always investigated and is sometimes indicated only in relation to language abilities, its structural and functional integrity seem closely related to the quality of praxic abilities.

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Mini-talks: LANGUAGE / 412

Deficit procedurale o nell'acquisizione di instances? Evidenze dall' apprendimento della Grammatica artificiale nei dislessici adulti

Authors: Giuliana Nardacchione[1]; Pierluigi Zoccolotti[2]; Chiara Valeria Marinelli[1]

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Un deficit nell'acquisire instances potrebbe essere alla base dei disturbi dell'apprendimento e spiegare la difficoltà nell'acquisire rappresentazioni ortografiche e fatti aritmetici. Studi di grammatica artificiale esaminano la capacità dei soggetti di apprendere implicitamente regole presenti in stringhe di stimoli visivi. Il seguente studio vuole comprendere quale sia il locus del deficit di automatizzazione dei dislessici e testare se le prestazioni della grammatica artificiale dipendono dall'apprendimento delle regole, delle instances o dalle proprietà distribuzionali apprese in fase di apprendimento mediante tasks di apprendimento, di giudizio grammaticale, di riconoscimento e di scrittura. Sono stati testati 49 dislessici e 74 controlli adulti. I risultati evidenziano che i dislessici imparano la grammatica artificiale e usano la memoria procedurale tanto quanto i controlli. Ciò si evince dall'effetto confondente degli stimoli grammaticali nel riconoscimento e dall'effetto grammaticale nel giudizio grammaticale. Inoltre, i dislessici hanno acquisito instances e le utilizzano, ma hanno rappresentazioni instabili e ciò si evince dalle migliori prestazioni con item appresi sia nel riconoscimento che nel giudizio grammaticale e da una maggiore difficoltà nel rifiutare item di controllo con errori non grammaticali. Inoltre, i dislessici iper-utilizzano le proprietà distribuzionali per compensare rappresentazioni instabili. Infatti, i dislessici, come i controlli, compensano le difficoltà con posizioni critiche per bigrammi più frequenti nel riconoscimento e nel giudizio grammaticale e riducono gli errori nel giudizio grammaticale con bigrammi ad alta frequenza più dei controlli. Pertanto, è necessario promuovere l'utilizzo delle conoscenze distribuzionali come strategia di compenso e aumentare le opportunità di apprendimento per consolidare l'apprendimento di instances.

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Mini-talks: LIFE CYCLE / 218

The Effect of Creativity on Cognitive Reappraisal Effectiveness: An Experimental Study in a Sample of Older Adults.

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Emotion regulation (ER) has been acknowledged as an important factor for older adults'well-being. Recently, it has been suggested that creativity may play a role in the effectiveness of cognitive reappraisal, an adaptive form of ER. The present study aims to test whether creativity is linked to greater effectiveness in the use of cognitive reappraisal in a sample of older adults.
A preliminary sample of 43 healthy older adults (age range 62-100) living in nursing homes was randomly assigned to either the experimental group (who completed a primer creativity task) or the control group (who completed a filler task). After this first step, all participants performed an ER task, involving the observation of thirty images (neutral or negative). Each image was preceded by an instruction to either watch or use positive reappraisal. After watching each image, the participants were asked to rate their affective experience (valence and arousal plus a list of emotional

labels).
Results showed that the experimental group reported less unpleasantness and less intense negative emotions when using positive reappraisal compared to the control group while observing negative images. However, no significant differences between groups were found concerning self-reported arousal.
Overall, these findings support a significant effect of creativity on the use of cognitive reappraisal in older adults: Creativity seems to improve the effectiveness of this ER strategy in decreasing unpleasantness of negative stimuli. Providing new evidence about the links between creativity and ER, the results of this study hold significant implications to foster healthy aging.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks: ATTENTION (1) / 250

How different shades of emotion may affect automatic and voluntary attentional processes: a study with the Emotional Flicker Task

Authors: Francesca Favieri[1]; Giovanna Troisi[2]; Barbara Blasutto[2]; Ilaria Corbo[1]; Giuseppe Forte[None]; Renato Ponce[3]; Giulia Marselli[2]; Maria Casagrande[1]

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Corresponding Author: francesca.favieri@uniroma1.it

Introduction:
Individuals exhibit higher attentional allocation toward threatening than neutral information. Nevertheless, a source of variability could be related to both the specific emotion elicited and the attentional process involved. This study aimed to investigate the impact of different emotionally activating negative stimuli on the automatic and voluntary attentional processes.
Methods:
Ninety-six participants completed an Emotional-Flicker Task with negative (covid-related; non-covid-related) and neutral scenes. The task allowed for the assessment of changes in the central (CI) or marginal (MI) interest areas of the scene, enabling the examination of both automatic and voluntary orienting of attention respectively. Response times for change detection were compared.
Results:
A within-subject ANOVA on Type of Change (CI; MI) x Valence (Covid, Non-Covid, Neutral) reported a significant interaction ($F_{2,192}=176.6$; $p<0.0001$). A different pattern of change detection in COVID-related stimuli emerged. Generally, changes in COVID-related scenes were detected slower, but interestingly, while for neutral and non-covid stimuli CI changes were faster detected than MI, a reverse pattern emerged for COVID-related stimuli.
Conclusions:
Our results provide insights into how different shades of negative emotions influence attentional processes. The anxiety generated by COVID-related stimuli appears to interfere with automatic but not voluntary attention. This could be due to the activation of cognitive representations of the pandemic that are involved in the top-down processing of the scene. Conversely, the threatening nature of non-covid scenes would activate an automatic response typical of fear (fight or flight), resulting in a fast detection in the automatic phase of the attention process

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Mini-talks: ACTION & MOTION (1) / 411

Exploring the effects of transcutaneous Vagus Nerve Stimulation on long-term potentiation induced by paired associative stimulation.

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Transcutaneous vagus nerve stimulation (tVNS) is held as a non-invasive tool to enhance the effect of motor rehabilitation in neurological diseases. However, there is no evidence supporting its neurophysiological effect on brain plasticity. Here, we aimed to explore the effects of tVNS on brain plasticity, induced by Paired Associative Stimulation (PAS), i.e., a paradigm generating long-term potentiation in the human motor cortex.

We measured the effects of active vs sham tVNS on neuroplasticity induced by PAS over the left or right primary motor cortex (M1). PAS consisted in a 13-minute block of repetitive pairing of peripheral median nerve stimulation and cortical TMS on M1. Before, immediately after, and 30 minutes later PAS, we recorded the recruitment curve and the amplitude of the motor evoked potentials from the index and little finger muscles. This procedure was repeated in three different daily sessions: at baseline without any stimulation and after 60 min of active and sham tVNS. During tVNS, participants perform a visuomotor task with their index finger to exploit possible state-dependent effects of tVNS.

Preliminary results did not show any increase in PAS-induced plasticity. Differently, an explorative analysis seems to suggest a counteracting effect of active tVNS on PAS-induced plasticity. Given that previous studies showed an increase in cortical inhibition after active tVNS, these results would support the role of cortical inhibition as critical for regulating plasticity, providing some hints on the application of tVNS as a noninvasive and nonpharmacological way to regulate aberrant brain plasticity.

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Mini-talks: LANGUAGE / 419

L'associazione tra i disturbi di lettura, scrittura e matematica nei disturbi di apprendimento dipende da una difficoltà ad acquisire instances?

Author: Chiara Valeria Marinelli[1]

Co-authors: Giuliana Nardacchione [1]; Paola Angelelli [2]; Marco Turi [2]; Marialuisa Martelli [3]; Pierluigi Zoccolotti [3]

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Il deficit di automatizzazione è stato esaminato in un campione di soggetti con disturbo di apprendimento adulti (138 controlli; 51 dsa) e bambini (155 controlli e 64 dsa), anche in funzione del tipo di deficit (i.e., nel recupero mnestico di instances vs nell'applicazione delle procedure di letto-scrittura e calcolo). A tal fine è stato utilizzato il test di apprendimento alfanumero. I risultati evidenziano che sia i controlli che i dsa bambini e adulti migliorano secondo un andamento a potenza: iniziano il compito applicando l'algoritmo e, in seguito, mediante la pratica e l'esposizione ripetuta agli stimoli, passano da un'elaborazione seriale, lenta e controllata dell'algoritmo ad una prestazione automatizzata e veloce basata sul recupero dell'instances dalla memoria. Tale traccia di memoria consente l' automatizzazione delle prestazioni. Inoltre, vi è un'assenza dell'effetto generalizzazione, indice che l'apprendimento è item-specifico. In questa prova si evidenzia una difficoltà nei partecipanti con un deficit nelle instances (i.e., nel recupero di rappresentazioni ortografiche e fatti aritmetici), mentre chi ha un deficit procedurale ha prestazioni paragonabili ai controlli. L'inefficienza nel formare instances è alla base del deficit di automatizzazione e della comorbilità dei DSA (come ipotizzato dal Modello multilivello dell'apprendimento di Zoccolotti et al., 2020).

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

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No

Mini-talks: EMOTION (1) / 432

Meta-analysis of the Difficulties in Emotion Regulation Scale and its short forms: A two-part study

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Co-authors: Leonardo Carlucci [2]; Marco Innamorati [3]; Michela Balsamo [4]; Tonia Samela [5]

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[3] *Department of Human Sciences, European University of Rome, Rome, Italy*

[4] *Department of Psychological, Health, and Territorial Sciences, G. d'Annunzio University Chieti–Pescara, Chieti, Italy*

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The Difficulties in Emotion Regulation Scale (DERS) is the most used self-report questionnaire to assess deficits in emotion regulation (ER), composed of 6 dimensions and 36 items. Many studies have evaluated its factor structure, not always confirming the original results, and proposed different factor models. A possible way to try to identify the dimensionality of the DERS could be through a meta-analysis with structural equation models (MASEM) of its factor structure. The MASEM indicated that a six-factor model with 32 items (DERS-32) was the most suitable to represent the dimensionality of the DERS ($\chi2$=2095.96, df=449, p<.001; root mean square error of approximation [RMSEA] = 0.024, 95% confidence interval [CI]: 0.023–0.025; comparative fit index [CFI] = 0.97; Tucker Lewis index [TLI]=0.96; standardized root mean squared resid- ual [SRMR]=0.04). This result was also confirmed by a confirmatory factor analysis ($\chi2$ = 3229.67, df = 449, p < 0.001; RMSEA =

0.075, 95% CI: 0.073–0.078; CFI = 0.94; TLI = 0.93; SRMR = 0.05) on a new sample (1092 participants; mean age: 28.28, SD=5.82 years) recruited from the Italian population. Analyses and results from this sample are reported in the second study of this work. The DERS-32 showed satisfactory internal consistency for all its dimensions and correctly categorized individuals with probable borderline symptomatology. In conclusion, the DERS-32 has demon- strated to be the best model for the DERS among all the others considered in this work, as well as a reliable tool to assess deficits in ER.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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No

Mini-talks: LIFE CYCLE / 371

Fattori di rischio e demenza: un'analisi preliminare sui potenziali predittori socio-demografici

Author: Febronia Riggio[1]

Co-authors: Massimo Mucciardi [2]; Massimo Raffaele [3]; Chiara Rizzotto [1]; Amelia Gangemi [1]

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Demenza è un termine ombrello utilizzato per definire un gruppo di disturbi neurologici caratterizzati da declino cognitivo che interferisce con le attività quotidiane dell'individuo. Secondo l'Organizzazione Mondiale della Sanità (OMS), la demenza è una priorità di salute pubblica globale. I fattori di rischio studiati includono l'età, la storia familiare, i disturbi cardiovascolari, il fumo, il consumo eccessivo di alcol e la sintomatologia depressiva. Oltre ai predittori clinici, la letteratura si occupa di approfondire il ruolo di alcune variabili sociodemografiche, quali età e livello d' istruzione. Inoltre, studi rilevano l'importanza dell'occupazione lavorativa in quanto l'impegno in un lavoro mentalmente stimolante è associato ad un migliore funzionamento cognitivo con l'avanzare dell'età. In questa prospettiva, l'obiettivo del presente studio è stato quello di indagare i fattori sociodemografici descritti in un campione reclutato presso il Policlinico G. Martino di Messina. Il campione è composto da 102 soggetti (m=41, f=61) e un'età media di 75.5 anni. Durante la fase anamnestica, è stata condotta un'intervista semi-strutturata per raccogliere le informazioni di interesse per il nostro studio. Successivamente, l'Addenbrooke's Cognitive Examination - III (ACE-III) e il Mini-Mental State Examination (MMSE) sono stati somministrati quali misure neuropsicologiche. I dati sono stati analizzati attraverso l'interfaccia Jamovi. I risultati delle analisi preliminari hanno confermato che l'istruzione e il tipo di occupazione sono predittori delle prestazioni cognitive. Lo studio di queste caratteristiche è utile per la diagnosi precoce delle malattie neurodegenerative.

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Symposia: I molti volti del processamento dei volti / 79

I molti volti del processamento dei volti

Authors: Mario Dalmaso[1]; Chiara Ferrari[2]

[1] *Università di Padova*

[2] *Università di Pavia*

Corresponding Authors: mario.dalmaso@unipd.it, chiara.ferrari@unipv.it

Nelle interazioni sociali, le nostre azioni sono profondamente influenzate da una ricca gamma di segnali provenienti dai volti altrui. Tra questi, la direzione dello sguardo gioca un ruolo primario nei processi di attenzione, mentre le espressioni emotive sono centrali nei meccanismi affettivi. Inoltre, elementi più stabili come identità, genere ed età possono modulare significativamente le dinamiche relazionali.
Questo simposio mira a offrire un'ampia panoramica sulle sottili ma significative influenze che gli stimoli facciali esercitano sul piano neuro-cognitivo. Presenteremo, attraverso una prospettiva multidisciplinare, dati provenienti da recenti studi che hanno impiegato tali stimoli per disvelare i complessi meccanismi di elaborazione sottostanti.

Oratori:
1. Maria Arioli, Bergamo
2. Francesca Ciardo, Bicocca
3. Andrea Ciricugno, Pavia
4. Silvia Gobbo, Bicocca
5. Anna Lorenzoni, Padova

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No

Symposia: Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato / 54

Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato

Authors: Tiziana Quarto[1]; Paola Palladino[1]

[1] *University of Foggia*

Corresponding Author: tiziana.quarto@unifg.it

Superando la visione dualistica che pone la cognizione e l'emozione come due funzioni mentali distinte e separate, la psicologia moderna è concorde nell'affermare che cognizione ed emozione rappresentano due aspetti interagenti di uno stesso processo volto alla messa a punto di un comportamento adattivo. In linea con quest'idea, l'avvento delle neuroscienze ha messo in evidenza un alto grado di sovrapposizione tra i circuiti cerebrali coinvolti in compiti cognitivi e quelli coinvolti in compiti emotivi. Aree cerebrali della corteccia frontale comunemente ritenute come la sede della cognizione sono infatti attive anche in risposta a stimoli emotivamente salienti come i volti contenenti espressioni facciali. Viceversa, aree sottocorticali del circuito limbico comunemente coinvolte in risposta a stimoli emotigeni, vengono anche coinvolte durante compiti di attenzione o memoria con stimoli

non emotivamente connotati. A livello comportamentale, gli stati emotivi influenzano le performance cognitive e l'apprendimento, e queste a loro volta generano o modificano stati emotivi. Nel presente simposio poniamo l'attenzione sul rapporto tra emozione e cognizione, esplorando i diversi contesti e le diverse modalità in cui è possibile osservare questa interazione. In particolare, si mostra l'impatto dei processi emotivi sulle performance e/o sull'attività cerebrale durante un compito di cognizione spaziale, di memoria episodica, di controllo cognitivo e di lettura di parole, in campioni di differenti età che includono bambini o adulti o anziani affetti da malattie neurodegenerative. Le evidenze mostrate sottolineano l'importanza di un approccio integrato tra emozione e cognizione sia nell'ambito della ricerca di base che in contesti clinici e applicativi.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie / 166

Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie

Authors: Maria Loconsole[1]; Silvia Guerra[2]

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

Corresponding Authors: maria.loconsole@unipd.it, silvia.guerra@unipd.it

'Noi, gli animali e le piante'. L'essere umano ha la tendenza a riferirsi alle altre specie come organismi completamente diversi e separati. Tale propensione ci porta spesso a guardare all'uomo come unico agente cognitivo possibile. L'approccio comparato ci permette di superare i limiti dell'antropocentrismo e antropomorfismo individuando e decifrando i fattori cognitivi che contraddistinguono ciascuna specie. Questo simposio intende affrontare tale questione evidenziando come processi che si credevano essere solo umani siano invece possibili anche in organismi molto diversi grazie a meccanismi specifici dell'adattamento di una certa specie. Tratteremo il ruolo dei diversi emisferi cerebrali sullo sviluppo e funzionamento di abilità cognitive nei pesci (Maria Elena Miletto-Petrazzini); il contributo derivante da un approccio computazionale per la classificazione dei repertori comunicativi in animali non-umani, tramite lo studio del pulcino di pollo (Antonella Maria Cristina Torrisi); lo studio di correlati comportamentali, neurofisiologici e cognitivi, per l'indagine dei processi emotivi nelle api mellifere (Luigi Baciadonna); le nuove sfide e approcci per lo studio dei processi cognitivi in organismi aneurali, facendo in particolare riferimento al modello delle piante (Margherita Bianchi); i meccanismi attentivi che permettono alle piante di esplorare l'ambiente e interagire con esso (André Geremia Parise). Questo ci permetterà di fornire una visione più integrata dell'evoluzione dei diversi meccanismi e processi cognitivi adottando una prospettiva sia animale che vegetale.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Symposia: Studiare la memoria semantica tramite spazi vettoriali / 133

Studiare la memoria semantica tramite spazi vettoriali

Author: Daniele Gatti[1]

[1] *Università di Pavia*

Corresponding Authors: daniele.gatti@unipv.it, federica.santacroce.fs@gmail.com, francesca.rodio@iusspavia.it, rolando.bonandrini@unimib.it

Nel corso degli ultimi due decenni, vari modelli che rappresentano i propri contenuti all'interno di spazi vettoriali sono stati utilizzati come proxy della memoria semantica. In questo simposio intendiamo mostrare come questo tipo di approccio possa essere applicato con successo a un ampio numero di processi e componenti legati all'elaborazione del significato. I quattro interventi previsti avranno temi molto eterogenei tra loro, con lo specifico scopo di mostrare la varietà e la profondità delle possibili applicazioni di queste metodologie. Nello specifico, gli interventi spazieranno dalla relazione tra aspetti episodici e semantici, alle componenti visive nei falsi ricordi semantici, passando per aspetti ortografici nell'elaborazione di parole e pseudoparole, fino alla relazione tra aspetti sublessicali e processi spaziali.

Discussant:
Marco A. Petilli

Oratori:
Rolando Bonandrini
Daniele Gatti
Francesca Rodio
Federica Santacroce

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

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Yes

Symposia: The ontogenetic necessity to extract information from the auditory environment / 36

Prosodic and linguistic cues from voices: which holds greater attention from newborns?

Author: Valentina Silvestri[1]

Co-authors: Silvia Polver ; Maria Lorella Giannì [2]; Angelo Petrelli [3]; Lorenzo Colombo [4]; Hermann Sergio Bulf [1]

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[2] *Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, NICU, Milan, Italy. Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy.*

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Voices are arguably the most relevant auditory stimuli for human social interactions conveying linguistic content but also offering several paralinguistic cues about the speakers, including their identity, gender, age, and emotional state. Thus, from voices, it is possible to extract both the linguistic

content conveying propositional meaning and the prosodic aspects conveying the speaker's affective intention and emotional status. To date, there is substantial evidence indicating that newborns are equipped to identify both linguistic cues, recognize different languages (Byers-Henlein et al., 2010; Mehler et al., 1988), and also to be sensitive to prosodic and social aspects, being able to discriminate the emotional valence of sentences (Mastropieri & Turkewitz, 1999). However, it remains unknown to what extent linguistic or prosodic aspects of speech attract newborns'attention the most.
In the present study, to unravel the impact of linguistic and social cues on influencing voice attention, newborns are presented with the same nursery rhyme narrated by an actress (i.e., condition with both linguistic and prosodic aspects), hummed by the same actress (i.e., condition with only prosodic cues) or narrated by a synthesizer (i.e., condition with only linguistic cues) while their high-amplitude nonnutritive sucking behavior was registered.
Our findings revealed a decelerated nonnutritive sucking behavior for the nursery rhyme narrated by the synthesizer, interpreted as a consequence of attentional capture in response to the condition in which the linguistic content is not coupled with the prosodic cues, as in the case of natural language to which newborns are exposed since the prenatal period.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The ontogenetic necessity to extract information from the auditory environment

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: I molti volti del processamento dei volti / 50

Gaze matters: On the nature of the reverse congruency effect.

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Co-author: Mario Dalmaso [1]

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Eye-gaze plays a central role in social interactions and can elicit orienting of attention in an observer. Recent evidence has shown differences in inducing attentional shifting between eye-gaze stimuli compared to non-social stimuli (e.g., 'arrows'). For example, in a spatial Stroop task, while arrows induce a standard congruency effect (faster reaction times for congruent compared to incongruent trials), eye-gaze stimuli elicit a reversed congruency effect (faster reaction times for incongruent compared to congruent trials). Our study aims to further explore the explanation for the reverse congruency effect related to joint attention: on incongruent trials, specifically for eye-gaze stimuli, the peripheral stimulus is pointing towards the object to which participants' attention is expected to be allocated (i.e., the fixation). Participants (N = 60) were asked to discriminate the direction indicated by the target (arrow or eye-gaze stimuli), which can appear to the left or right of a central fixation point. Participants were instructed to keep their eyes at fixation and to ignore the location in which the target could appear. To further explore the joint-attention assumption, we manipulated the central fixation point (i.e., the object of joint focus), which, within trials, could be either a meaningful real-life object or a symbolic cross. The results replicate previous studies, showing a standard congruency effect for arrow stimuli and a reverse congruency effect for eye-gaze stimuli, for both the symbolic cross and the meaningful real-life object fixation points. Ongoing research is still exploring the nature of this result.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

I molti volti del processamento dei volti

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 407

Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale

Author: Silvia Zanchi[None]

Co-author: Monica Gori

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L'abilità di percepire e combinare coordinate spaziali che provengono da diversi segnali sensoriali è fondamentale per conoscere l'ambiente e interagire con esso. Sebbene il ruolo della vista sia predominante nel fornire un'accurata rappresentazione dello spazio, comprendere anche il contributo degli altri sensi nella sua assenza è essenziale per una completa analisi delle diverse modalità con cui il cervello elabora l'ambiente. Questo simposio ha lo scopo di proporre uno sguardo approfondito sulle diverse dimensioni della percezione spaziale e il loro ruolo cruciale nello sviluppo cognitivo, motorio e comportamentale. In particolare, durante il simposio, si esploreranno le abilità di ragionamento spaziale, localizzazione, percezione ed esplorazione dell'ambiente esterno e del proprio corpo e in relazione con l'altro. Inoltre, ci si focalizzerà sulla capacità di creare rappresentazioni precise e accurate dello spazio con cui anche il corpo interagisce, in presenza e in assenza di disabilità sensoriale, nel corso dello sviluppo fino al raggiungimento dell'età adulta, e si metteranno in luce i cambiamenti e le adattabilità che caratterizzano questi processi. Gli interventi dei diversi relatori permetteranno di offrire una ricca panoramica di quelle modalità di percezione spaziale che evolvono durante lo sviluppo e che si modificano sulla base della disponibilità delle risorse sensoriali, evidenziando anche le implicazioni cliniche per le disabilità sensoriali e per l'ottimizzazione dell'interazione tra l' individuo e l'ambiente fisico e sociale.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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No

Symposia: Studiare la memoria semantica tramite spazi vettoriali / 352

ESTRAZIONE DI REGOLARITÀ STATISTICHE PER GENERALIZZARE INFORMAZIONI EPISODICHE IN CONOSCENZE CONCETTUALI

Author: Federica Santacroce[1]

Co-authors: Annalisa Tosoni [1]; Carlo Sestieri [2]; Davide Di Censo [1]; Giorgia Committeri [1]

[1] *G. d'Annunzio University*

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Estraiamo costantemente regolarità dall'esperienza, creando memorie concettuali per organizzare conoscenze1. Studi precedenti si sono spesso concentrati su conoscenze precedentemente consolidate2, qui invece abbiamo indagato il processo di trasformazione di nuove informazioni contestuali in conoscenze generalizzate.
40 partecipanti hanno guardato una serie TV (encoding) ed eseguito successivamente un compito semantico che richiedeva di quantificare la relazione tra coppie di personaggi della serie su una linea orizzontale (retrieval). 20 hanno eseguito il compito dopo ogni episodio (gruppo esplicito), mentre l'altra metà solo dopo aver completato la serie (gruppo implicito). Abbiamo costruito una mappa sociale dei personaggi soggettiva con le risposte dei partecipanti ed una oggettiva valutando diversi parametri attraverso un nested model. Successivamente, abbiamo testato la similarità tra mappa soggettiva ed oggettiva identificando il parametro cruciale. Infine, abbiamo valutato se l'aggiunta di materiale episodico incrementasse la similarità tra le mappe nel gruppo esplicito.
Abbiamo riscontrato una similarità significativa tra mappa soggettiva ed oggettiva (Mantel-correlation=0,7; p<0,001). Inoltre, la co-occorrenza fisica dei personaggi (second hierarchical level) è risultato il parametro fondamentale nella costruzione della mappa soggettiva (r=2,663738; p<0,001). Infine, la quantità di materiale episodico (episodio 1-5) ha migliorato significativamente la similarità tra mappa soggettiva ed oggettiva (r= -2,433113; p<0,001).
È emerso che costruiamo mappe sociali tenendo traccia delle interazioni tra personaggi in una narrazione e che la loro presenza fisica è fondamentale. Con l'aggiunta di episodi, la mappa semantica diventa più stabile ed oggettiva. Ciò conferma che il processo di creazione di significato dagli eventi emerge e si consolida con la ripetizione e l'integrazione3.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Studiare la memoria semantica tramite spazi vettoriali

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 477

Introduzione al simposio

Symposia: The ontogenetic necessity to extract information from the auditory environment / 34

The ontogenetic necessity to extract information from the auditory environment

Author: Valentina Silvestri[1]

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From the very beginning infants are aware of their surrounding environment. Since the auditory system is one of the first sensory systems to develop, newborns can already absorb a wealth of information from their auditory environment. They exhibit both behavioral and neurophysiological

responses to a variety of external sounds, such as pure tones, sounds at different acoustic frequencies, and speech.
The goal of this symposium is to update the audience on current knowledge concerning newborns' auditory perceptual expertise and on how they cope with the rich surrounding auditory environment soon after birth. We aim to address not only the development and timing of organized auditory sensory skills like voice and speech processing, multisensory integration, and numerical cognition, but also the mechanisms that drive their emergence.
The first part of the symposium will focus on the factors influencing voice processing in newborns (Silvestri) and speech processing in infants (Polver). Next, we will tackle the effects of prenatal auditory learning on subsequent abilities at birth (Castellani). The discussion will continue with a series of studies investigating how information from different senses is constantly integrated, highlighting early signatures of audio-tactile body-related multisensory integration (Rossi Sebastiano) and audio-visual numerical information (Eccher) in the newborn's brain.
Together, this symposium will represent an attempt to address open questions regarding the integration of different auditory processes and to foster a discussion on the early abilities and skills in the first months of life as well as the role of auditory experiences both before and after birth.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The ontogenetic necessity to extract information from the auditory environment

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie / 209

Unraveling the neuro-ethological components of emotions in honeybees

Author: Luigi Baciadonna[1]

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The idea that invertebrates have primitive forms of emotions is growing, partly because of recent evidence of their high-level cognitive skills. However, these skills do not imply the existence of emotional states per se and the characterization of emotions in invertebrates is still at its infancy. Here we used a multicomponent approach, including behavioural, neurophysiological, and cognitive correlates, to obtain insights on the emotion of fear using honey bees as a model (Apis mellifera) following the perception of an immediate or future danger. Following the condition, in which a color-light context defines the occurrence of shock we were able to characterize the behavioural and physiological building blocks of fear. Not only did the bees learn and remember the negative event for up to one hour, but their behaviour was modulated by the intensity of the shock. In addition, bees that learned the association had a different respiratory dynamic than the control bee. The behavioural and physiological pattern we observed strongly suggests that the bees were not simply acting reflexively. Furthermore, we found higher levels of serotonin in the brain samples of conditioned bees compared to the control bees. The involvement of serotonin, a neurotransmitter widely known to be involved in mammalian emotions, highlights the phylogenetic link between invertebrate and vertebrate neurobiology. Investigating the proximate mechanisms of emotion in invertebrates has the potential to bypass the discussion of the appropriateness of semantic labels and advance our understanding of how these mechanisms parallel those found in mammals, including humans.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Una, nessuna e centomila menti: studiare i processi cognitivi in diverse species

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 331

Comparazione tra abilità di localizzazione spaziale e tempi di reazione tra adulti e bambini sul piano frontale.

Authors: Gloria Calafatello[1]; Alessia Tonelli[2]; Silvia Zanchi[2]; Maria Bianca Amadeo[2]; Carolina Tammurello[1]; Walter Setti[2]; Monica Gori[2]

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L'abilità di orientarsi verso la fonte sonora è presente già dai primi giorni di vita. Studi su adulti rivelano una maggiore accuratezza nel localizzare stimoli orizzontali rispetto a quelli verticali. Al fine di comprendere lo sviluppo delle competenze di localizzazione uditiva sul piano frontale, questo esperimento confronta le abilità di localizzazione spaziale tra adulti e bambini (3-5 anni), analizzando accuratezza e tempi di reazione (RTs) relativi a stimoli orizzontali e verticali sul piano frontale. Sono state confrontate le risposte e RT di 4 stimoli (due orizzontali, due verticali), posti su una matrice di altoparlanti 5x5 registrate attraverso risposta tattile. L'ANOVA a due vie ha evidenziato differenza tra gruppi ($p<0.001$) e tra condizione ($p.<0.001$). I test post-hoc hanno confermato che entrambi i gruppi sono più accurati per i suoni orizzontali (adulti: $p.<0.001$, bambini:<0.001). Inoltre, gli adulti risultano essere più veloci a localizzare gli stimoli ed entrambi risultano più veloci nel localizzare suoni orizzontali (adulti: $p.<0.0001$, bambini: $p:=0.0059$). Sebbene i risultati dei bambini riflettano un pattern simile a quello degli adulti, le loro performance rivelano in generale minore accuratezza e RT più lunghi. I bambini di 3-5 anni localizzano meglio suoni orizzontali di quelli verticali, ciò conferma che in età prescolare sono sensibili alle caratteristiche cerebrali che favoriscono la localizzazione di suoni. Inoltre, i presenti risultati sono in linea con gli studi in letteratura che suggeriscono un aumento progressivo dell'accuratezza e RT sempre più rapidi che si stabilizzano nel corso dello sviluppo, fino a complete maturazione dei sistemi percettivi.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie / 167

Attenzione nelle piante: il sottile equilibrio fra essere unità e molteplicità nell'interagire con il mondo

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Le piante sono organismi molto complessi, in grado di percepire e di rispondere simultaneamente ai diversi stimoli ambientali. Nonostante il loro successo evolutivo negli ultimi 440 milioni di anni, come accade a tutti gli organismi vivi, la loro capacità di interazione e risposta ai diversi stimoli ambientali è limitata. Ciò suggerisce che le piante possiedano un meccanismo che permette loro di selezionare e dare priorità agli stimoli rilevanti per la loro sopravvivenza. Un meccanismo di selezione che potrebbe assomigliare a quello che, nel mondo animale, chiamiamo attenzione selettiva. Attraverso lo studio della attività elettrica delle piante, noi abbiamo ipotizzato che se una pianta fosse in un stato di attenzione, si osserverebbe che i suoi segnali elettrici avrebbero più energia, sarebbero meno complessi, più regolari, e sarebbero più correlati fra di loro —un comportamento convenente con la struttura modulare di questi organismi. Per testare l'ipotesi, abbiamo studiato la segnalazione elettrica di diverse piante in situazioni che presumibilmente richiederebbero attenzione. I risultati indicano che in molti casi la segnalazione elettrica delle piante si comporta come previsto, il che suggerisce un metodo empirico per studiare attenzione selettiva nelle piante. Tuttavia, la presunta attenzione non dura molto, ma probablimente solo quando la pianta deve sincronizzare il funzionamento delle sue parti per rispondere a uno stimolo rilevante alla sua sopravvivenza. Una pianta, quindi, oscilla fra unità e molteplicità nei suoi rapporti con il mondo. Tali evidenze suggeriscono l'esistenza di una forma di attenzione specifica delle piante che è essenzialmente diversa dalla attenzione negli animali.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: I molti volti del processamento dei volti / 97

Uncanney valley effect e differenze individuali nella percezione di volti artificiali

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Gli agenti artificiali sono ormai parte della nostra quotidianità, e sono sempre più applicati in ambiti di sostegno e supporto psicologico. A partire dagli anni '70, numerosi studi hanno indagato il fenomeno noto come effetto Uncanney valley (UV), ossia il fenomeno per cui quanto più un agente artificiale assomiglia ad un agente umano nell'aspetto fisico, tanto più induce nell'osservatore sentimenti negativi e di avversione. Le evidenze sperimentali hanno portato alla formulazione di diverse ipotesi per spiegare questo fenomeno, tra le quali quella maggiormente diffusa attribuisce l'effetto UV a disposizioni e attitudini individuali nell'attribuire stati mentali agli agenti artificiali, quali l'età, il genere e l'animismo. Uno dei maggiori limiti di questa ipotesi è rappresentato dal fatto che non spiega come le differenze individuali determinino le diverse manifestazioni dell'effetto UV. Più

recentemente è stato proposto che l'effetto UV sia da ricondurre al fatto che, nel processare un volto ambiguo si verifichi l'attivazione contemporanea di due risposte, una per il volto artificiale e una per il volto naturale, con conseguente un aumento del carico cognitivo. I sentimenti negativi e di avversione sarebbero quindi una conseguenza dell'aumento della difficoltà nella selezione della risposta. In quest'ottica, il ruolo delle differenze individuali sarebbe quello di determinare diverse soglie nella presa di decisione. In questo studio, si indaga se differenze individuali nello stile di attaccamento e tolleranza agli stimoli ambigui determinano diverse soglie di sensibilità e criteri di risposta nella categorizzazione dei volti artificiali in funzione della loro somiglianza con volti umani.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

I molti volti del processamento dei volti

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: The ontogenetic necessity to extract information from the auditory environment / 288

Fetal learning before and after birth: Exploiting neural entrainment to asses perinatal learning capacity

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Co-authors: Barbara Italia [2]; Karol Poles [3]; Alice Rossi Sebastiano [3]; Davide Bottari [1]; Francesca Garbarini [3]

[1] *IMT Lucca*

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Learning is the fundamental backbone of social creatures. In humans, learning is the essential ability to take advantage of what others have already experienced. Here, we want to evaluate the presence of learning during pregnancy and the maintenance of it after birth in postnatal life. Exploiting EEG neural entrainment, we want to evaluate the presence of a brain preference for a learned melody in contrast to the unlearned one.

40 young adults were divided into two experimental groups. They listened once a day for a month to one of two different melodies (melody A vs melody B). After the training, participants underwent an EEG experiment in which they listened, in a randomized order, the two melodies. An encoding model measured the degree of synchronization between brain activity and the continuous auditory input of the learned and unlearned melody. We contrasted the neural tracking of the learned versus the non-learned melody in both group (i.e. Group A trained on melody A and group B trained on melody B), employing a permutation cluster based test. Crucially, the pattern showed by the data is reversed, when group A is evaluated, the TRF for the melody A (i.e. the learned one) is greater than TRF for the melody B (Pclust<0.05); crucially, when group B is evaluated we found an opposite pattern (Pclust<0.05).

Our results in adults indicate that our protocol is valid to test the presence of fetal learning. The following steps will consist of finishing the data collection in newborns.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The ontogenetic necessity to extract information from the auditory environment

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Studiare la memoria semantica tramite spazi vettoriali / 200

L'impatto dell'entropia dell'informazione semantica sull'estrazione del significato da unità ortografiche.

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[2] *University of Milano-Bicocca*

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Recenti evidenze suggeriscono che il significato possa essere estratto non solo da parole, ma anche da stringhe di lettere inesistenti (pseudoparole). Secondo il modello FastText, estrarre il significato da una qualsiasi stringa di lettere implica combinare il significato della parola intera -se esiste- e delle subunità ortografiche di n lettere (ngrams) che lo compongono, con eguale importanza attribuita a ciascuna componente. In questo lavoro abbiamo testato l'assunzione di equivalenza degli ngram nell' estrazione del significato. Abbiamo esplorato la possibilità che gli umani attribuiscano una diversa importanza agli ngram in relazione a quanto regolarmente compaiono in specifiche parole (entropia ortografica) vs. quanto precisa è l'informazione semantica che convogliano (entropia semantica). Tale esplorazione è stata compiuta mediante ri-analisi di dati di tempi di reazione dal British Lexicon project. Dati preliminari suggeriscono che il modello che pesa il ruolo degli ngram in base all' entropia ortografica sia il migliore nel predire la performance umana, seppur tale effetto sia specifico per le parole. Questo suggerisce che quando estraiamo il significato da una stringa di lettere conosciuta combiniamo il significato dagli ngram che la costituiscono in una maniera che dipende da quanto specifica è l'informazione ortografica che convogliano.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Studiare la memoria semantica tramite spazi vettoriali

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 373

Il ruolo della disabilità visiva nella cognizione spaziale, un approfondimento su rappresentazione numerica spaziale e ragionamento spaziale

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Nella disabilità visiva, la cognizione spaziale risente di fattori come: la deprivazione totale o parziale della vista, l'età di insorgenza e la durata della disabilità. In particolare, in un compito di rappresentazione spaziale dei numeri dove su una barretta aptica i partecipanti indicano dove si trova un numero target positivo o negativo, è stato osservato che partecipanti ipovedenti hanno una performance con numeri negativi peggiore rispetto a partecipanti totalmente ciechi. Si ipotizza che nel caso dell'ipovisione, la vista, seppur parziale, abbia un ruolo fondamentale per raggiungere un livello di processamento spaziale più complesso necessario al fine di invertire la polarità dei numeri sulla rappresentazione spaziale, risultando di conseguenza deficitaria l'identificazione della progressione dei numeri negativi sulla linea numerica. Nel presente studio, si intende testare questa ipotesi, indagando la relazione tra la capacità di rappresentare numeri spazialmente e capacità più complesse di problem solving e ragionamento spaziale, in funzione della disabilità visiva. Oltre alla linea numerica aptica, partecipanti con disabilità visiva vengono sottoposti all'adattamento aptico del test dei cubi di Kohs dove si richiede di riprodurre una configurazione aptica astratta utilizzando cubi con facce distinte da una diversa tessitura. Il confronto tra le performance in questi test permette di verificare se capacità cognitive spaziali più complesse (cubi di Kohs) influenzano in maniera discriminativa la performance alla linea numerica aptica in relazione al grado di disabilità visiva (e.g. ipovisione, cecità congenita, cecità acquisita). Tali risultati forniscono nozioni utili alla riabilitazione spaziale in casi di ipovisione e progressivo decadimento della vista.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie / 395

Impatto della lateralizzazione cerebrale sulle capacità di discriminazione di quantità dello zebrafish

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La lateralizzazione cerebrale, cioè l'asimmetria delle funzioni tra l'emisfero sinistro e quello destro, è un tratto comune nel regno animale. Un numero crescente di ricerche ha dimostrato che alterazioni della lateralizzazione cerebrale sono associate a disturbi neuropsichiatrici e malattie neurologiche.
La diffusione della specializzazione emisferica in numerose specie ha consentito di sviluppare modelli animali per studiare la relazione tra la lateralizzazione cerebrale e le capacità cognitive. In particolare, lo zebrafish mostra comportamenti lateralizzati legati ad asimmetrie neuroanatomiche a livello epitalamico e si è affermato come modello ideale per studiare la lateralizzazione cerebrale a diversi livelli di complessità: dai geni al comportamento.
In questo lavoro abbiamo studiato l'impatto della lateralizzazione cerebrale sulle capacità di discriminazione di quantità di zebrafish modificati geneticamente in modo da ottenere diversi fenotipi di

asimmetria cerebrale a livello epitalamico: normale, invertito e simmetrico. A tal fine, è stata valutata la capacità dei pesci di discriminare tra gruppi di conspecifici di diversa numerosità (1 vs. 3, 2 vs. 3 e 2 vs. 5) in un test di scelta spontanea. È stata anche analizzata la distribuzione asimmetrica di geni espressi a livello telencefalico (grik1a, robo1, eomesa, arrb2, gap43) in funzione dei diversi fenotipi di lateralizzazione cerebrale. I risultati hanno mostrato che la perdita dell'asimmetria epitalamica ha influenzato le capacità di discriminazione e l'espressione genica, mettendo in evidenza la relazione tra modelli atipici di lateralizzazione cerebrale e la capacità di stimare quantità.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: I molti volti del processamento dei volti / 165

Facemasks reduce face trustworthiness perceived by deaf individuals

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During the COVID-19 pandemic, most people wore face masks to protect themselves and the others. Whilst this was recommendable, unfortunately face masks represented a critical problem for deaf people by preventing lipreading. Moreover, the mouth region represents a critical source of information for inferring emotional states as well as for visually-based social first impressions. Visually-based first impressions may become even more relevant for a deaf person that cannot rely on verbal cues. In light of this, an interesting question is whether face masks impact on social inferences, such as trustworthiness judgments, in a similar vein in deaf and hearing individuals. Our results showed that overall deaf individuals performed similarly to hearing controls in discriminating different levels of trustworthiness in computer-generated faces manipulated for trustworthiness. However, deaf individuals judged faces with face masks to be overall less trustworthy than hearing participants. We interpret this finding as suggesting that for the deaf individuals, occluding the mouth area generates frustration and feelings of communication exclusion and this may result in less trustworthiness perceived in others.

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If you're submitting a symposium talk, what's the symposium title?:

I molti volti del processamento dei volti.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 333

The dance of attachment: linking motor characteristics with attachment and behavioural measures of the dyad mother-child with visual impairment

Authors: Marta Guarischi[1]; Eleonora Montagnani[1]; Guido Catalano[2]; Sabrina Signorini[2]; Monica Gori[1]

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Introduction: Studying attachment development in children with visual impairment (VI) is fundamental to investigating the associations of the attachment style with the maturation of socioemotional skills and the emergence of psychological conditions.

Methods: Four children with VI (38.5 ± 33.9 months old) played while parents sat in one corner of the set-up. We used the Vicon Motion Tracking System to quantify the mean distances between parents and children during playground exploration. Parents completed two questionnaires: the Child Behaviour Checklist (CBCL) and the Adult Attachment Questionnaire (ASQ).

Results: Concerning the ASQ, we found a high positive correlation between the mean distance and anxious ambivalent (r=0.92) style of attachment; conversely, we found a high negative correlation between the mean distance and the secure style (r=-0.62), both not significant. Concerning the CBCL, we highlight a high negative and significant correlation between the mean distance and the subscales related to sleep problems (r=-0.96, p=0.03). Conversely, we found a moderate negative correlation between mean distance and the somatic complaints (r=-0.51) and the withdraw subscales (r=-0.55), which were not significant.

Conclusion: Our preliminary results suggest an interesting link between motor characteristics, the attachment style of the mothers, and some behavioural characteristics of children with VI. Our ecological set up also resembled children every-day environment, allowing a more realistic data collection and thus, more unbiased results. This enabled us to investigate motor characteristics that represents an indirect measure of cognitive, emotional, and relational aspects.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: The ontogenetic necessity to extract information from the auditory environment / 112

Cross-modal numerical information in the human newborns'brain: an EEG frequency-tagging study

Authors: Elena Eccher[1]; Marco Buiatti[1]

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Since the first hours of life human newborns are subjected to a multitude of stimuli and they need to learn quickly how to integrate visual and auditory input. Cross-modal integration operates not only at the perceptual level, where low-level features of stimuli such as shape, texture, and temporal occurrence are recognized, but also at a more abstract level. For instance, research has shown that human newborns are able to discern congruent and incongruent conditions in numerosity when presented simultaneously with visual and auditory stimuli. Indeed, newborns as young as 50-hours old exhibit prolonged attention towards the screen when the number of a set of dots corresponds to the number of syllables in a concurrent auditory stream, compared to when such correspondence is absent. It has been hypothesized that this ability reflects an inherent abstract numerical representation present from birth. Tacking advantage of a novel EEG frequency-tagging paradigm, we adapted the original behavioural study to investigate the neural basis of this phenomenon, aiming to understand how the brain process congruent and incongruent audio-visual numerical information. Preliminary results will be presented to discuss not only the neural underpinnings of the so-called number sense, but also to show how critical auditory stimulation is for supporting complex abstract representations in the brains of newborns.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The ontogenetic necessity to extract information from the auditory environment

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Studiare la memoria semantica tramite spazi vettoriali / 169

Il ruolo della somiglianza visiva e linguistica nei falsi ricordi: evidenze da modelli computazionali applicati al paradigma DRM

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Il paradigma DRM (Deese-Roediger-McDermott) è uno dei compiti più utilizzati per indagare sperimentalmente la formazione dei falsi ricordi. In letteratura, questo paradigma è stato impiegato quasi esclusivamente con stimoli linguistici: le parole tendono ad essere erroneamente riconosciute quando sono semanticamente simili a quelle dell'elenco memorizzato. Sebbene sia ben consolidato il ruolo della somiglianza linguistica nella generazione dei falsi ricordi, rimane meno chiaro se processi analoghi caratterizzino anche il dominio visivo. Per esplorare questa possibilità, in questo studio abbiamo adottato un approccio computazionale per quantificare in modo indipendente la somiglianza linguistica e la somiglianza visiva per parole e immagini in due varianti del paradigma DRM. Queste varianti includono un DRM con stimoli visivi appartenenti a categorie diverse (Esperimento 1) ed un analogo DRM con stimoli linguistici (Esperimento 2). Al fine di stimare le somiglianze visive e linguistiche, sono stati utilizzati rispettivamente un CNN (Convolutional Neural Network) ed un DSM (Distributional Semantic Model). I risultati indicano che i falsi ricordi aumentano per le parole e le immagini nuove (i.e., non presentate durante la fase di memorizzazione) che sono visivamente e linguisticamente simili a quelle presentate negli elenchi memorizzati. Nello specifico, nell' Esperimento 1 (con stimoli visivi) è stato rilevato come il contributo della somiglianza visiva fosse maggiore di quella linguistica; al contrario, nell'Esperimento 2, è stato osservato il trend opposto. Complessivamente, risultati di questo studio suggeriscono dunque che diverse tracce esperienziali,

sia linguistiche che visive, possono interagire e integrarsi nella costruzione della nostra memoria semantica, in funzione delle richieste contestuali dettate dal compito.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Studiare la memoria semantica tramite spazi vettoriali

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: I molti volti del processamento dei volti / 219

Neural correlates of emotional face processing: the role of the cerebellum

Authors: Andrea Ciricugno[1]; Sonia Paternò[1]; Zaira Cattaneo[2]; Chiara Ferrari[1]

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The posterior cerebellum has recently gained attention as a crucial structure of the social brain, mediating the processing of different social cues, including emotional facial expressions. Nevertheless, many open questions still remain regarding its causal contribution and functional role in this process. To address this gap in cerebellar knowledge, we performed a series of studies employing different transcranial magnetic stimulation (TMS) approaches, to explore the topographical organization of the causal contribution of the posterior cerebellum during the processing of facial expressions, the temporal course of its recruitment as well as its causal connectivity between other regions of the social brain (i.e., the posterior superior temporal sulcus, pSTS). We demonstrated the existence of a medial-to-lateral gradient in the functional topography of the cerebellar response to affective functions, with regions dedicated to the processing of emotional features of facial expressions located medially and those involved in higher-level social inferences located in more lateral sectors of the cerebellum. Moreover, we revealed, for the first time, that when processing emotional faces the posterior cerebellum is recruited in a specific time window (ranging from 120-220 ms from the face onset), with this recruitment being simultaneous to that of the pSTS. Lastly, we showed that pSTS recruitment during the perception of facial expressions is contingent on the level of cerebellar activation, providing evidence that cerebellar-to-pSTS communication is instrumental to processing emotions in others'faces.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

I molti volti del processamento dei volti

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie / 222

Zoomorfizzazione vs omissione: verso una ricerca bio-ecologicamente informata sulle capacità delle piante

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La ricerca sui comportamenti animali si è confrontata con una corposa serie di problemi derivanti dall'antropomorfismo, che hanno a loro volta portato a radicalizzare queste tendenze in contromisure anti-antropomorfizzanti.
Esistono diversi tipi di antropomorfismo, dai casi più ingenui, a quelli maggiormente giustificabili, riconducibili alla più ampia categoria dell'antropomorfismo "critico", che secondo alcuni svolgerebbe addirittura un ruolo "euristico"nella ricerca sulle capacità degli animali non umani.
Dopo aver richiamato sia i pro sia i contro delle tendenze ad antropomorfizzare, evidenzierò che nell'emergente area di ricerca sulle capacità delle piante, alcune difficoltà incontrate nello studio del comportamento animale potrebbero riproporsi in modi più accentuati, a causa delle differenze strutturali e di organizzazione di questi organismi, sessili e aneurali. Tra i rischi sono la tendenza ad "animalizzare"i loro comportamenti o al contrario, se non riconducibili a modelli paradigmatici, la propensione a omettere o negare le loro strategie alternative di risoluzione di problemi di sopravvivenza.
Una costante consapevolezza critica, teorica e metodologica, può favorire, nell'ambito degli studi comparati, lo sviluppo di una branca di metanalisi (una procedura flessibile non riduzionista) per selezionare, comparare e contestualizzare informazioni, al fine di studiare le abilità cognitive delle varie specie, comprendendo in modo sempre più accurato, quali processi e lati di un comportamento considerare nei vari organismi, in base alle loro diverse specializzazioni sensoriali-cognitive.
Tale impegno potrebbe concretizzarsi in una forma di "organismorfismo", consistente nell'individuazione degli strumenti epistemici più promettenti per individuare termini, concetti e procedure sperimentali più adeguati allo studio delle specie in questione, vegetali comprese.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 417

Visione cieca e basi neurali della percezione non consapevole nell' Uomo e nei primati non umani

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Lesioni alla corteccia visiva primaria (V1) producono cecità clinica nella parte corrispondente del campo visivo, ma alcune funzioni visive permangono in assenza di consapevolezza –"visione cieca" . In questo intervento presenterò una breve rassegna storica del fenomeno per poi concentrarmi su risultati recenti in due principali ambiti: integrazione visuo-motoria e percezione emotiva. Evidenze

comportamentali, trattografiche e di neuroimmagine funzionale supportano la possibilità che l'emisfero intatto giochi un ruolo fondamentale nel trasformare il segnale visivo non percepito consapevolmente in comportamenti complessi. Infine, la capacità di decodificare in assenza di consapevolezza diversi segnali emotivi, quali posture corporee o espressioni facciali, è legata all'integrità funzionale e alle caratteristiche neurofisiologiche di vie sottocorticali evolutivamente antiche che coinvolgono il collicolo superiore, il talamo posteriore e l'amigdala.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: The ontogenetic necessity to extract information from the auditory environment / 77

Movement-dependent modulation of audiotactile integration early in life: distinct patterns of multisensory integration following self- and externally-directed movements in adults and newborns

Author: Alice Rossi Sebastiano[1]

Co-authors: Barbara Italia [1]; Nicolo Castellani [2]; Giulia Serra [3]; Karol Poles [1]; Alessandra Coscia [4]; Chiara Peila [4]; Francesca Garbarini [1]

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[2] *IMT Lucca*

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Compelling evidence shows that audio-tactile multisensory integration (AT-MSI) is modulated by body proximity already at birth. In our view, early movement may represent the developmental context allowing to encode multisensory stimuli in a body-centered reference frame, by anchoring auditory and tactile inputs to the body through proprioception. Based on these premises, we addressed whether AT-MSI is modulated by movement's directionality, i.e., whether distinct patterns of AT-MSI can be measured following hand-movements directed either to the self-body or to the external environment. First, we devised an EEG audio-tactile paradigm to capture this effect in adults and, then, we tested it in newborns. In our paradigm, tactile stimuli are delivered on the hand, either alone or concomitant with a sound and, by leveraging a postural manipulation, the hand is dragged either towards or away from the body. In a series of experiments, we demonstrate that, in adults, greater AT-MSI responses are observed following self- as compared to externally-directed movements. Crucially, preliminary results in newborns suggest the presence of this adult-like pattern already at birth. In sum, we provide original evidence on movement-dependent modulations of AT-MSI, in line with pioneering prenatal studies, highlighting differential kinematics during self- and externally-directed movements. In our interpretation, when movements aim toward the self, proprioceptive input anchors audio-tactile stimuli to the body, resulting in boosted AT-MSI responses. Our data indicate the presence of such a mechanism already at birth, which may ensure the evolutionary advantage of allowing better processing of environmental events approaching the body.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The ontogenetic necessity to extract information from the auditory environment

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Studiare la memoria semantica tramite spazi vettoriali / 134

Pseudogeografia

Author: Daniele Gatti[1]

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La conoscenza geografica emerge dalla relazione tra informazioni spaziali e linguistiche (ad esempio, memorizzare il nome di una città e la sua posizione spaziale assoluta su una mappa). Qui abbiamo indagato se questa relazione possa essere ricondotta a una sistematica mappatura linguaggio-spazio. I risultati di due esperimenti computazionali basati su oltre 40.000 città in 5 paesi hanno rivelato regolarità sistematiche linguaggio-spazio come indicato sia da informazioni linguistiche superficiali (ad esempio, lettere e bigrammi che compongono il nome della città) sia da informazioni linguistiche più profonde (estratte da un modello semantico distribuzionale). Successivamente, per testare se queste regolarità statistiche influenzano i giudizi geografici, abbiamo chiesto ai partecipanti di valutare la posizione geografica di stringhe di lettere mai attestate ma linguisticamente plausibili. I risultati di tre esperimenti comportamentali indicano che le prestazioni dei partecipanti si allineano alle predizioni dei modelli linguistici addestrati su dati reali. Questi risultati non solo attestano la presenza di regolarità sistematiche tra linguaggio e spazio, ma indicano anche che gli esseri umani si affidano a queste regolarità nella creazione di nuovi spazi.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Studiare la memoria semantica tramite spazi vettoriali

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: I molti volti del processamento dei volti / 129

Il riconoscimento di espressioni facciali non emotive e identità nella Malattia di Parkinson

Author: Silvia Gobbo[1]

Co-authors: matilde menghini ; Elisa Urso ; Aurora Colombo ; Cecilia Perin ; Ioannis Ugo Isaias ; Roberta Daini

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La Malattia di Parkinson (MP) si caratterizza per sintomi motori e non motori. Tra questi ultimi, vi è la difficoltà nel riconoscimento di volti connotati da espressioni facciali emotive. Tra le diverse interpretazioni, è stato ipotizzato che questo deficit sia legato ad una ridotta espressività facciale che impedisce il riconoscimento di espressioni facciali tramite simulazione sul proprio volto. Per distinguere il contributo specifico della comprensione delle emozioni da quello dell'elaborazione dei movimenti facciali nel deficit di emozioni osservato nei pazienti con MP, abbiamo condotto due esperimenti su espressioni facciali non emotive. Nell'Esperimento 1, un gruppo di pazienti con MP e un gruppo di controlli sani hanno svolto un compito di riconoscimento di espressioni non emotive in volti di diversa identità e un compito di riconoscimento di identità in volti con espressioni diverse. Nell'Esperimento 2, i pazienti con MP e i controlli sani sono stati sottoposti a un compito in cui dovevano riconoscere l'identità di volti codificati attraverso un'espressione facciale non emotiva, attraverso un movimento rigido della testa o come neutri. In entrambi gli esperimenti non sono state osservate differenze tra i due gruppi nelle accuratezze. Inoltre, il punteggio di ipomimia non ha avuto un effetto specifico sull'elaborazione delle espressioni. Dati questi risultati, la difficoltà nel riprodurre espressioni non sembra compromettere la percezione di tali espressioni negli altri. Concludiamo che la difficoltà dei pazienti nel riconoscere le espressioni facciali emotive non sia tanto dovuta ad una deficitaria elaborazione delle espressioni facciali, quanto più ad una compromissione nel riconoscimento generale di emozioni.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

I molti volti del processamento dei volti

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 377

Altered neural oscillations underlying visuospatial processing in cerebral visual impairment

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Visuospatial processing deficits are commonly observed in individuals with cerebral visual impairment (CVI), even in cases where visual acuity and visual field functions are intact. CVI is a brain-based visual disorder associated with the maldevelopment of central visual pathways and structures. However, the neurophysiological basis underlying higher-order perceptual impairments in this condition has not been clearly identified, which in turn poses limits on developing rehabilitative interventions. Using eye-tracking and EEG recordings, we assessed the profile and performance of visual search on a naturalistic virtual reality-based task. Adolescents with CVI and age-matched controls with neurotypical development were instructed to search, locate, and then fixate on a specific target placed among surrounding distractors at two levels of task difficulty. We investigated ocular behaviour (i.e., success rate, reaction time, and gaze error) and neural oscillations, analysing

both evoked and induced components of a broadband frequency range (4–55 Hz). Behavioural data showed an overall visual search impairment in CVI participants. Neural oscillations analysis revealed, regardless of task difficulty, markedly reduced evoked theta activity and higher induced gamma response in CVI. Moreover, while in controls, induced alpha activity increased with task difficulty, this modulation was absent in the CVI group, identifying a potential neural correlate of visual search and distractor suppression deficits. We conclude that pervasive impairments of visual search in CVI are associated with substantial alterations across a wide range of neural oscillation frequencies. Alterations were found in both evoked and induced oscillatory components, suggesting the involvement of feedforward and feedback processing.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: The ontogenetic necessity to extract information from the auditory environment / 102

Predictive processes and linguistic patterns in early language acquisition

Author: Silvia Polver[None]

Co-authors: Maria Clemencia Ortiz Barajas ; Ramon Guevara ; Judit Gervain

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Brain functions depend on recognizing patterns to predict future events (Auksztulewicz et al., 2018; Morillon & Schroeder, 2015). Early in auditory processing, the brain detects repetitions, guiding attention to specific intervals in the auditory stream (Auksztulewicz et al., 2018). Speech perception involves the dynamic sampling of acoustic information across different time scales simultaneously (Morillon & Schroeder, 2015), with timing predictability playing a crucial role in language learning (Kujala et al., 2023). Despite infants having immature auditory systems, they display remarkable ability in speech detection (Cabrera & Gervain, 2020). However, the specific factors enhancing their encoding of natural speech remain unclear (Nencheva & Lew-Williams, 2022). Moreover, since natural auditory scenes are less strictly predictable, the extent to which the brain tolerates variability while still perceiving sounds' sources signals as predictable remains unresolved (Bendixen, 2014). We investigated whether infants' speech sensitivity arises from recognizing temporal patterns. Testing 6-month and 12-month-olds with EEG during natural conversations, we manipulated pause durations: typical (200 ms), overlapping (500 ms), and prolonged (850 ms). We expect 6-month-olds to predict with short and long pauses but falter with overlap. Twelve-month-olds might struggle even with long pauses, mirroring adults albeit with more uncertain responses. Exploring temporal predictability in early language processing, our study sheds light on neural mechanisms during critical language development periods in infancy.

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If you're submitting a symposium talk, what's the symposium title?:

The ontogenetic necessity to extract information from the auditory environment

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato / 87

L'effetto di un feedback emotivo (un volto) nella modulazione dei costi legati al cambiamento di compito.

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Studi recenti hanno dimostrato che stimoli a valenza negativa sembrano portare ad una riduzione del conflitto cognitivo esperito in un compito successivo. In due esperimenti, abbiamo indagato l'effetto di volti emotivi usati come feedback da parte dei membri del proprio gruppo sociale o di un altro gruppo sociale diverso nel modulare il controllo cognitivo. Nello specifico, ai partecipanti è stato chiesto di eseguire un paradigma di cambio di compito (task-switch task) in cui ogni risposta era seguita da un volto neutro o emotivo della stessa fascia di età dei partecipanti (18-25) o di età diversa (oltre 70). I costi del cambiamento di compito sono stati analizzati in funzione del volto presentato alla fine della prova precedente. Nell'Esp. 1, la probabilità che il feedback fosse un volto emotivo era del 50%. Nell'Esp. 2, la probabilità che il feedback fosse un volto emotivo era invece del 25%. La valenza del volto emotivo è stata manipolata tra due esperimenti, nell'Esp.1 sono stati confrontati volti neutri con volti emotivi a valenza positiva (volto felice), mentre nell'Esp.2 sono stati confrontati volti neutri con volti a valenza negativa (volto triste). I risultati preliminari hanno mostrato che, quando il volto emotivo veniva fornito come feedback con una probabilità del 50%, i costi di legati al cambiamento di compito erano influenzati dall'età del volto ma solo se il compito era inserito in una cornice emotiva negativa. I risultati di entrambi gli studi saranno discussi nella cornice teorica della modulazione affetto-congruente del controllo cognitivo.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

EMOZIONE E COGNIZIONE: EVIDENZE DALLA PSICOLOGIA SPERIMENTALE PER UN APPROCCIO INTEGRATO

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato / 174

Now for me, later for you: less attention to delay information is associated with more impulsive surrogate intertemporal choices

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Deciding for others (surrogate decision making) is ubiquitous in
everyday life as many prototypical scenarios can be found in various life domains. Previous research indicated that, when faced with monetary
intertemporal choice for others, people exhibit a more impulsive choice pattern than when deciding for themselves, but still little is known about the underlying cognitive mechanism. Some evidence suggests that a critical role may be covered by the attention devoted to the amount or to the delay information, and to the role of the surrogate person. The current study investigates how intertemporal decisions for the self differ from those made for another person, whose closeness to the participant was manipulated by identifying a friend (less close) or a family member (closer). Participants completed an intertemporal choice task for the self and the other person, while their ocular movements in various areas of interest (AOI) were recorded. Results revealed that participants exhibit a higher discounting rate (more impulsive choices) when deciding for themselves than when deciding for the other person. Also, in the "self condition", delay information's AOI received more visive attention than the amount information's AOI, while the inverse pattern was detected when analyzing attention distribution during the "other condition". A possible explanation is that, when making decisions for themselves, people may be more likely to generate anticipated negative emotions due to waiting time required for greater rewards, and this negative emotion guides the attentive and decisional processes. Future studies should further explore the mechanism behind the self-other decision gap.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

EMOZIONE E COGNIZIONE: EVIDENZE DALLA PSICOLOGIA SPERIMENTALE PER UN APPROCCIO INTEGRATO

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Una, nessuna e centomila menti: studiare i processi cognitivi in diverse specie / 420

A computational framework for automated detection and feature extraction of chicks'vocalisations.

Author: Antonella Maria Cristina Torrisi[1]

Co-authors: Inês De Almeida Nolasco [1]; Elisabetta Versace [1]; Emmanouil Benetos [1]

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Animal vocalisations are pivotal for intraspecies communication and serve as indicators of welfare and social interactions. In the early days of life, poultry chicks' (Gallus gallus) vocalisations are crucial for hen-chick relation, offering insights into chicks' affective states and welfare. However, there is a dearth of automated vocalisation detection and recognition systems. While previous studies have identified different classes of chick calls linked to internal states, existing classification models lack systematic validation and are subject to human bias.

To address this gap, we are developing a computational framework for automated detection and feature extraction of chicks' vocalisations. Six signal processing algorithms were tested for call onset detection. The High Frequency Content (HFC) algorithm performed best with an F1 measure of 0.85. Additionally, our method for computing call offsets, combining first-order difference of energy with local minimum detection, outperformed other methods with an F1 measure of 0.94. Lastly, we designed a pipeline for the automatic extraction of audio features that have been proven to be crucial for call type classification. The extracted features encompass the call duration, F0 statistics,

energy ratios of harmonics, root mean square (RMS), spectral centroid, and waveform envelope statistics.

Our computational approach utilises signal processing algorithms to automatically detect calls and extracts acoustic features to identify vocal signatures of chicks. Ongoing research will determine if distinct categories or a continuous spectrum more aptly characterise chicks' vocal production. These findings offer insights into chicks' vocal repertoire and welfare, with potential applications in behavioural studies and animal welfare assessment.

If you're submitting a poster, would you be interested in giving a blitz talk?:

Yes

If you're submitting a symposium talk, what's the symposium title?:

Junior Simposia on Comparative Cognition

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato / 84

La valutazione della memoria episodica in pazienti AD e aMCI attraverso la realtà virtuale: l'influenza degli stimoli emotivi

Author: Diletta Decarolis[1]

Co-authors: Loreta Cannito [2]; Tiziana Quarto [1]; Paola Palladino [3]

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Uno degli elementi distintivi delle prime fasi cliniche del decadimento cognitivo lieve amnesico (aMCI) e del morbo di Alzheimer (AD) è la compromissione della memoria episodica (EM).

Tuttavia, la maggior parte degli strumenti neuropsicologici classici forniscono una sua valutazione lontana da quella comunemente esperita nella vita quotidiana. inoltre, la maggior parte della ricerca si concentra maggiormente sulla valutazione delle funzioni cognitive senza tenere conto delle variabili emotive strettamente connesse alla stessa.

Il presente studio mira a valutare la EM nei pazienti con AD, aMCI e anziani sani utilizzando un ambiente virtuale e mira a determinare se gli stimoli emotivi possano influenzare la codifica e le prestazioni della memoria nell'invecchiamento patologico.

Il protocollo richiede ai partecipanti di esplorare un ambiente virtuale. La navigazione del percorso è impostata su una prospettiva egocentrica: i partecipanti osservano la scena muoversi e devono ricordare gli oggetti che trovano durante il percorso. Vengono utilizzate tre diverse condizioni: gli oggetti da ricordare sono posti accanto a personaggi umani con emozioni neutre (i), positive (ii)o negative (iii). Alla termine, sono sottoposti ad un compito di richiamo libero e un task di riconoscimento visivo.

I risultati preliminari rivelano il vantaggio dell'utilizzo di un ambiente virtuale per la valutazione della EM rispetto ai classici compiti neuropsicologici. Inoltre, le emozioni mostrano un'influenza sulla memoria dei partecipanti: quelle positive sembrano migliorare le prestazioni dei pazienti, coerentemente con l'"effetto positività" riportato in letteratura.

Gli sviluppi futuri potrebbero sfruttare questo ambiente virtuale non solo per la valutazione, ma anche per scopi riabilitativi e terapeutici.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Emozione e Cognizione: evidenze dalla psicologia sperimentale per un approccio integrato

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato / 100

Correlati elettrofisiologici dell'elaborazione di parole emotive in bambini di scuola primaria

Author: Gianluigi Serio[1]

Co-authors: Chiara Valeria Marinelli [1]; Diletta Decarolis [2]; Eugenio Trotta [1]; Paola Palladino [3]; Tiziana Quarto [2]; Veronica Debora Toro [1]

[1] *Università di Foggia*

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[3] *Università degli studi di Foggia*

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Diversi studi elettroencefalografici e psicolinguistici hanno suggerito che il contenuto emotivo delle parole influenza i processi cognitivi di lettura. Le parole emotive rispetto a quelle neutrali producono modulazioni in più componenti elettrofisiologiche ed in diverse regioni cerebrali. Tuttavia, il modo in cui le caratteristiche emotive delle parole (valenza ed arousal) interagiscono per determinare tali effetti è ancora oggetto di dibattito. Inoltre, gli studi precedenti si sono concentrati principalmente su partecipanti adulti, mentre gli studi in popolazioni in via di sviluppo sono quasi del tutto assenti. Per questi motivi, un gruppo di bambini di scuola primaria con sviluppo tipico (8 -10 anni) è stato testato in due compiti di categorizzazione emotiva di parole con diversa valenza ed arousal. I set di stimoli sono stati costruiti ad hoc controllando tutte le principali variabili linguistiche e mantenendo massima la differenza tra le caratteristiche emotive valutate. Oltre ai tempi di reazione, sono stati registrati i potenziali correlati agli eventi tramite elettroencefalografia. Le analisi si sono focalizzate principalmente sulla componente N400, che in diversi studi è stata associata ai processi di accesso lessicale ed integrazione semantica che si verificano durante la lettura. I risultati preliminari indicano che le modulazioni della N400 discriminano le parole con diversa valenza, soprattutto quando le parole hanno un arousal elevato. Questi risultati forniscono indizi importanti per la comprensione dei meccanismi di integrazione del significato emotivo durante lo sviluppo, e contribuiscono alla formulazione di modelli funzionali ed anatomici dei processi di lettura che tengano conto anche delle caratteristiche emotive delle parole.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

EMOZIONE E COGNIZIONE: EVIDENZE DALLA PSICOLOGIA SPERIMENTALE PER UN APPROCCIO INTEGRATO

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Emozione e Cognizione: Evidenze Dalla Psicologia Sperimentale Per Un Approccio Integrato / 76

L'influenza degli stimoli emotigeni sulle rappresentazioni spaziali egocentriche ed allocentriche.

Author: Francesco Ruotolo[1]

Co-authors: Tina Iachini [1]; Filomena Leonela Sbordone [1]; Mariachiara Rapuano [1]; Gennaro Ruggiero [1]

[1] *Dipartimento di Psicologia, Università degli Studi della Campania "L. Vanvitelli"*

Corresponding Author: francesco.ruotolo@unicampania.it

Le emozioni influenzano sia come percepiamo noi stessi che l'ambiente circostante (Damasio, 1994; Schwarz, 2012). Tuttavia, il modo in cui gli individui rappresentano le informazioni spaziali è stato prevalentemente studiato in contesti privi di informazione emotivamente saliente. Quindi, lo scopo di questo lavoro è quello di indagare l'influenza degli stimoli emotigeni sulla cognizione spaziale. In tre studi i partecipanti eseguivano l'Ego-Allo Task (Iachini & Ruggiero, 2006), che consiste nel memorizzare la posizione di triadi oggetti geometrici e successivamente giudicare se un oggetto target era quello apparso più vicino al partecipante (compito egocentrico) o più vicino ad un altro oggetto (compito allocentrico). In maniera cruciale, nello Studio 1, immagini emotivamente salienti (positive vs negative) sono state presentate ai partecipanti o prima della codifica, o durante il mantenimento o prima del recupero dell'informazione spaziale. Nello Studio 2, gli oggetti geometrici sono stati sostituiti con immagini emotivamente salienti. Infine, nello Studio 3, l'ambiente nel quale veniva eseguito l'Ego-Allo task poteva avere una diversa valenza (positiva vs negativa). I risultati hanno mostrato che gli stimoli emotigeni influenzano negativamente i giudizi spaziali anche se in maniera differente a seconda delle fasi di elaborazione dell'informazione. Invece, rappresentazioni spaziali più accurate emergono sia quando l'ambiente o gli stimoli hanno una valenza positiva. Questi risultati suggeriscono che l'interazione tra emozioni e cognizione spaziale è modulata dal livello di elaborazione dell'informazione spaziale e dalle caratteristiche contestuali. La complessità di tale interazione ha profonde implicazioni teoriche.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

EMOZIONE E COGNIZIONE: EVIDENZE DALLA PSICOLOGIA SPERIMENTALE PER UN APPROCCIO INTEGRATO

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: I molti volti del processamento dei volti / 487

General discussion

Corresponding Author: chiara.ferrari@unipv.it

Symposia: Studiare la memoria semantica tramite spazi vettoriali / 486

Discussione generale

Corresponding Author: daniele.gatti@unipv.it

Symposia: Spazio sensoriale: Esplorando le dimensioni e lo sviluppo della percezione del corpo e dell'ambiente con e senza disabilità sensoriale / 476

Domande e discussione

Symposia / 202

Interoception for cardiac and gastric signals: exploring individual differences and their implications for cognitive and mental health

Authors: Silvia Canino[1]; Andrea Salaris[2]

[1] *Magna Graecia University, Catanzaro (Italy)*

[2] *Università degli studi di Roma La Sapienza*

Corresponding Authors: silvia.canino@unicz.it, andrea.salaris@uniroma1.it

Interoception is the perception of inner bodily sensations, including signals from diverse bodily systems, such as the cardiac and digestive ones. This sensory capacity exhibits significant variability among individuals, garnering attention in research because of its relevance to mental and physical health and in driving cognitive processes such as decision-making and social cognition. Despite tremendous advances, numerous questions remain to be addressed.

This symposium aims to delve into the intraindividual variability of interoceptive processing and its implications for mental and cognitive health. Through a series of talks, we will explore the complex interplay between the conscious perception of bodily signals and mental processes, shedding light on how individual differences in interoception contribute to cognitive functioning and well-being.

In the first part, we will focus on interoception for cardiac signals, exploring the dimensions that, at the conscious level, are more commonly supported across various taxonomies: interoceptive accuracy, sensibility, and awareness. Canino will show how these dimensions vary during development, focusing on adolescence, a period of life where many psychiatric disorders have their onset and which is argued to have a substantial impact on health later in life. Then, Vercelli and Gaita will shed light, respectively, on the consequences of such individual differences in (i) shaping bodily self-awareness and self-consciousness in a non-clinical population and (ii) in the construction of higher-order functional body representations in Parkinson's disease.
Salaris will conclude by analyzing the role of interoception in the symptomatology of functional gastrointestinal disorders and borderline hypertension, focusing on cardiac and gastric interoception.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 57

Multilab collaborations from the editor's perspective

Author: Davide Crepaldi[1]

[1] *SISSA*

Corresponding Author: dcrepaldi@sissa.it

There's no doubt that large-scale collaboration efforts are improving the precision and reliability of our science (wannabe) and, ultimately, the contribution of experimental psychology to the community at large. However, this radically new way of carrying out psychological research brings along several challanges. Some of these challenges are quite obvious and pervasive in our day-to-day activity (e.g., leading a group vs. working as a lonely wolf); others are more subtle (e.g., how to navigate seniority in a broad community vs. in your own lab, how to define –and promote– consensus). Some of these issues have strong implications on the editorial process – what gets published and what doesn't. Leveraging on my experience at the British Journal of Psychology and Psychonomic Bulletin and Review, I'll share some considerations (open questions, really) on these issues from the perspective of the Action Editor.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The Multiverse of Multi-labs. Methodological and Statistical Aspects of Multi-Lab and Multiverse Studies

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 109

I cambiamenti dell'architettura cognitiva e della struttura di personalità: gli effetti dell' invecchiamento e del ritiro sociale

Authors: Daniele Romano[1]; Giorgia Cona[2]; Michele Scandola[3]

[1] *Università degli Studi di Milano-Bicocca*

[2] *Università di Padova*

[3] *Department of Human Sciences*

Corresponding Authors: daniele.romano@unimib.it, giorgia.cona@unipd.it, michele.scandola@univr.it

Questo simposio viene organizzato nell'ambito del progetto PRIN 2022 - SCOPERTA. L'aumento dell'aspettativa di vita pone sfide cruciali alle società moderne (es., piano Next Generation EU). Cambiare invecchiando è un dato di fatto. L'obiettivo del simposio è quello di comprendere meglio tali cambiamenti, un processo che influenza la personalità, la cognizione e le relazioni sociali. Affronteremo tre temi chiave.
a) Cambiamenti strutturali della personalità nell'anziano: Il talk presenterà risultati che evidenziano come la personalità cambi dinamicamente struttura nel corso dell'invecchiamento (S. Gobbo, Milano-Bicocca).
b) Relazione personalità-cognizione: Verranno esplorati i modi in cui i cambiamenti di personalità si intrecciano con le modifiche cognitive durante l'invecchiamento (S. Vicentin, Padova).
c) Fattori sociali determinanti: Il talk si concentrerà sul ruolo del ritiro dal lavoro e dalla formazione come fattori sociali che influenzano i cambiamenti di personalità, focalizzandosi su giovani adulti "Not in Education, Employment or Training"- NEET (M. Esposito e M. Pastorelli, Verona).

Il simposio mira a cambiare la visione sull'invecchiamento cognitivo, valorizzando la riorganizzazione globale delle funzioni cognitive. Mira altresì a sfidare la visione tradizionale di una personalità tendenzialmente stabile e universale, proponendo un modello di personalità dinamica. Inoltre, approfondisce il ruolo di fattori contestuali –quali il ritiro dal lavoro e dalla formazione - nell'influenzare i percorsi di cambiamento.
Infine, pone l'accento su metodi e analisi innovative per delineare la complessità delle inter-relazioni tra molteplici dimensioni (es., exploratory graph analysis).
Questo simposio offre un'occasione per approfondire la comprensione dell'invecchiamento e identificare nuove strategie per promuovere un invecchiamento sano e attivo.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 12

The Multiverse of Multi-labs. Methodological and Statistical Aspects of Multi-Lab and Multiverse Studies.

Author: Filippo Gambarota[1]

Co-authors: Davide Crepaldi [2]; Marco Tullio Liuzza [3]; Giulia Calignano [1]; livio finos ; Michele Scandola [4]

[1] *University of Padova*

[2] *SISSA*

[3] *Università "Magna Graecia" di Catanzaro*

[4] *Department of Human Sciences*

Corresponding Authors: filippo.gambarota@unipd.it, dcrepaldi@sissa.it, liuzza@unicz.it, giulia.calignano@unipd.it, livio.finos@unipd.it, michele.scandola@univr.it

Modern research in psychology is adopting several tools to face the replicability and reproducibility crisis. In this context, multi-lab research combined with the multiverse approach is a very powerful yet complex approach. The symposium aims to present a modern overview of editorial aspects, statistical methods, and data management in the era of multi-lab and multiverse studies highlighting strengths, limitations, and challenges. The first talk by Crepaldi provides an introduction to multi-lab and multiverse studies focusing on the editorial aspects. The talk by Liuzza provides an example of planning a multi-lab study from a methodological and statistical point of view. Multi-lab studies require appropriate statistical models when planning (e.g., statistical power) and analyzing data. The talk by Calignano integrated the multiverse approach into the multi-lab methodology focusing on data pre-processing showing the amount of researchers' degrees of freedom and the impact on the final results. Summarising and presenting the results of a multiverse analysis requires appropriate descriptive and inferential tools. Given the lack of proper inferential methods, the talk by Finos proposed an innovative, flexible, and powerful inferential approach to summarise the results of a multiverse analysis. Especially for multi-lab studies, adopting open science practices in terms of transparency, preregistration, and data sharing, is becoming a new standard. However, data sharing is also a controversial, delicate, and often overlooked topic. The final talk by Scandola illustrates the problem of data management and sharing considering privacy policies and modern open science practices.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / **191**

Time perception: from sensation to memory

Authors: Alice Teghil[1]; Luigi Micillo[2]

[1] *Sapienza Università di Roma*

[2] *Università di Padova*

Corresponding Authors: alice.teghil@uniroma1.it, luigi.micillo@phd.unipd.it

Although no dedicated organ or sensory system exists to perceive time, temporal processing is essential to cognition at many levels, from sensory discrimination to the ability to mentally project oneself in the past and future. These processes extend across different temporal scales, ranging from milliseconds to seconds, days and even years. Despite the key role of time perception in cognitive processing, a comprehensive picture of how different levels of temporal representation are integrated is still missing. In this symposium, a set of findings from behavioral, neurophysiological and neuroimaging studies will be presented addressing mechanisms involved in time perception at different processing levels and timescales, and their interaction. Starting from neural processes involved in the intrinsic representation of time, evidence will be presented on how modality-specific and multimodal brain regions support a hierarchical representation of millisecond durations. Following presentations will offer insights on the contribution of physiological activation induced by emotional stimuli in shaping our perception of durations, and on the role of bodily and sensorimotor processing in building our representation of time from the range of seconds to the organization of memories of one's own life. Finally, the symposium will address how prior knowledge and reconstructive processes allow the emergence of temporal features of experiences in episodic memory. Overall, these studies demonstrate the presence of both common and specific mechanisms supporting the representation of time at different scales and processing levels, and provide insight on how these phenomena may be understood within an integrated framework.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **307**

The link between space and time along the human cortical hierarchy

Authors: Gianfranco Fortunato[1]; Valeria Centanino[None]; Domenica Bueti[2]

[1] *International School for Advanced Studies (SISSA)*

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In humans, very few studies have directly tested the link between the neural coding of time and space. Here we combined ultra-high field functional magnetic resonance imaging with neuronal-based modeling to investigate how and where the processing and the representation of a visual stimulus duration is linked to that of its spatial location. Results show a transition in the neural response to duration: from monotonic and spatially-dependent in early visual cortex, to unimodal and spatially-invariant in frontal cortex. This transition begins in extrastriate areas V3AB, and it fully displays in the intraparietal sulcus (IPS), where both unimodal and monotonic responses are present and where neuronal populations are selective to either space, time or both. In IPS, space and time topographies show a specific relationship, although along the cortical hierarchy duration maps compared to spatial ones are smaller in size, less clustered and more variable across participants. These results help to identify the mechanisms through which humans perceive the duration of a visual object with a specific spatial location and precisely characterize the functional link between time and space processing, highlighting the importance of space-time interactions in shaping brain responses.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Time perception: from sensation to memory

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 318

Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche

Author: Giulia Marselli[1]

[1] *Università di Roma, "La Sapienza", Dipartimento di Psicologia, Roma, Italia*

Corresponding Author: giulia.marselli@uniroma1.it

La memoria autobiografica (MA) ricopre un ruolo fondamentale per lo sviluppo dell'identità dell' individuo e per il mantenimento di un concetto di sé positivo. Tuttavia, può essere caratterizzata da distorsioni e il suo funzionamento può essere alterato da vari fattori.
Il simposio inizia con la presentazione di un nuovo strumento per misurare le convinzioni che le persone hanno sul funzionamento della memoria. Le implicazioni pratiche della disinformazione in tale ambito verranno discusse, in quanto ridurre il divario tra i contesti sperimentali e la vita reale è fondamentale per assicurare che le scoperte scientifiche e le applicazioni pratiche siano utili e significative per le persone. Per tale ragione, la discussione proseguirà con la presentazione di studi che si occupano delle distorsioni nella MA da vari punti di vista e in luce delle loro implicazioni quotidiane.
Inizieremo parlando dell'accuratezza dei ricordi tramite due studi: da un lato, attraverso una ricerca che indaga il meccanismo di codifica e creazione dei falsi ricordi; dall'altro lato, con uno studio che utilizza uno strumento per discriminare tra ricordi autobiografici veri e falsi.
Successivamente, analizzeremo la distorsione di un particolare tipo di ricordo: quello relativo alle azioni immorali. Infine, tratteremo della validazione di un nuovo strumento per la valutazione della MA. Attraverso questo strumento, indagheremo i fallimenti della MA in due gruppi: anziani con invecchiamento patologico e persone traumatizzate (genitori a lutto).
In conclusione, il simposio si propone di fornire una panoramica delle attuali direzioni di ricerca riguardanti la memoria autobiografica, sia nell'ambito sperimentale che nella vita quotidiana.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **481**

Introduzione

Symposia / **482**

Introduction (Romano, Cona, Scandola)

Symposia / **341**

Understanding individual differences in interoception: insights from adolescence

Author: Silvia Canino[1]

Co-authors: Valentina Torchia [1]; Teresa Iona [1]; Simona Raimo [1]; Liana Palermo [1]

[1] *Magna Graecia University, Catanzaro (Italy)*

Corresponding Author: silvia.canino@unicz.it

The perception of interoceptive signals and their neural representation profoundly affect physical, mental, and cognitive health. Despite this appreciation, the developmental trajectory of interoception is relatively under-researched, particularly during adolescence, a relevant period for interoceptive learning, as many bodily changes characterize it. This study aims to address this gap by exploring the development of different interoceptive dimensions, namely, interoceptive accuracy (IAcc), sensibility (ISe), and awareness (IAw), focusing on adolescence.

Fifty-five adolescents (12-14 yrs) and forty-seven young adults (20-34 yrs) participated in the study. They completed a heartbeat counting task probing IAcc (ratio of actual to reported heartbeats) and IAw (accuracy-confidence correlation), and two questionnaires exploring ISe across bodily axes.

Adolescents were as accurate as young adults in counting their heartbeats, suggesting an adult-like pattern in accurately processing interoceptive information (IAcc). However, when evaluating their performance, they showed lower metacognition, reporting lower accuracy-confidence correlations (IAw). Also, adolescents scored significantly different from young adults on ISe questionnaires, focusing more on somatosensorial and visceral body sensations (ISe) than young adults. Furthermore, the correlational analysis showed a lack of significant associations between the interindividual variability in the different interoceptive dimensions.

As already proved in studies on adults, current results indicate that the three interoceptive dimensions (IAcc, IAw, ISe) are independent and follow distinct developmental trajectories during adolescence. Given the impact of interoception in decision-making and emotional processing, this variance could be a candidate mechanism for the increased incidence of risky behaviors and emotional difficulties in this life period.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Interoception for cardiac and gastric signals: exploring individual differences and their implications for cognitive and mental health

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **315**

Credenze sul funzionamento della memoria autobiografica: un'analisi esplorativa nella popolazione italiana

Authors: Gianmarco Convertino[1]; Mara Stockner[1]; Jessica Talbot[1]; Michela Marchetti[1]; Danilo Mitaritonna[1]; Marta Vicario[None]; Giuliana Mazzoni[1]

[1] *Sapienza, University of Rome*

Corresponding Author: gianmarco.convertino@uniroma1.it

Si presenta il primo studio che valuta le convinzioni sul funzionamento della memoria umana nella popolazione italiana, utilizzando uno strumento di nuova concezione: l'Italian Memory Belief Questionnaire (IMBQ). La ricerca condotta in altri paesi ha dimostrato che le credenze sulla memoria variano ampiamente tra gruppi professionali e non professionali, suggerendo l'esistenza di limitazioni nella diffusione della conoscenza scientifica. Per accertare le credenze degli italiani sul funzionamento della memoria autobiografica (e.g., testimonianze oculari, rimozione di ricordi traumatici, fattori che influenzano il ricordo), 301 partecipanti nativi italiani hanno completato l'IMBQ. I partecipanti hanno anche completato una domanda di metamemoria per indagare se la consapevolezza di avere ricordi falsi potesse prevedere in modo differenziale credenze di memoria più ampie. Un'analisi fattoriale esplorativa ha identificato tre distinti fattori di credenze presenti nel set di dati: testimonianza oculare e affidabilità della memoria, trauma e ricordo, e elementi che migliorano il ricordo. Inoltre, molti italiani sostengono con forza l'idea che concetti controversi (e.g., la rimozione) siano possibili, indipendentemente dalla consapevolezza di avere ricordi falsi. Al contrario, i partecipanti comprendono le possibili inesattezze della memoria in contesti di testimonianza, in particolare se sono consapevoli dei limiti della propria memoria. I risultati vengono discussi in relazione all'importanza di affrontare la disinformazione sulla memoria, soprattutto in ambito clinico e forense.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **116**

Data sharing and privacy: fatal attraction

Authors: Michele Scandola[1]; Paulo Santos[2]; Vittorio Iacovella[3]; Marco Zanon[4]; Marta Bortoletto[5]; Giorgio Arcara[6]; Gian Mauro Manzoni[7]; Antony Casula[None]

[1] *Department of Human Sciences*

[2] *IRCCS San Camillo Venezia, Venezia, Italy*

[3] *Centro Interdipartimentale Mente/Cervello, Università di Trento, Trento, Italy*

[4] *Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy*

[5] *IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy*

[6] *IRCCS Fondazione Ospedale San Camillo, Venice, Italy*

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Open data is fundamental to open science, enhancing the trustworthiness and reproducibility of research alongside pre-registration. Many journals and European grants require data sharing and encourage compliance with the FAIR guidelines. However, despite its benefits, data sharing faces barriers, particularly around privacy.
GDPR mandates strict privacy protections that challenge the feasibility of anonymisation, especially in niche populations such as those in clinical or neurodivergent settings. Significantly, the AIP ethical code and, in multilab studies, the ethical standards of other nations, as well as the consent form, collectively play pivotal roles.
This talk will describe the inherent risks of data sharing, and present strategies to improve data anonymisation. It will explore potential solutions within the legal framework, acknowledging the complexities and ambiguities therein.
In addressing these challenges, we aim to strike a balance between the imperatives of open science and the rights of individuals to privacy and data protection.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The Multiverse of Multi-labs. Methodological and Statistical Aspects of Multi-Lab and Multiverse Studies.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 31

La struttura di personalità nell'invecchiamento sano

Authors: Daniele Romano[1]; Silvia Gobbo[2]

[1] *Università degli Studi di Milano-Bicocca*

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Corresponding Author: silvia.gobbo@unimib.it

Le teorie tradizionali della personalità presuppongono una struttura universale con un insieme limitato di tratti: in particolare, il modello HEXACO li raggruppa in sei fattori. Tuttavia, la personalità cambia nel corso della vita. L'invecchiamento, infatti porta a un ritiro dall'attività lavorativa accompagnato da problemi sanitari sempre crescenti. Questi fattori possono portare a un ritiro graduale o repentino dalla vita attiva. Sebbene siano stati documentati cambiamenti dimensionali della personalità con l'invecchiamento, le modifiche strutturali nei tratti di personalità nell'anziano non sono ancora state indagate. Per farlo, abbiamo pre-registrato uno studio in cui sono stati somministrati due questionari per indagare la struttura della personalità (i.e. HEXACO 60-item questionnaire e HEXACO adjective scale) assieme a un set di criteri e un questionario che indaga il benessere (i.e. BEN-SSC) a un campione di 200 partecipanti over 65 neurologicamente sani. Per indagare quante e quali dimensioni di personalità sono individuabili negli anziani, abbiamo svolto sia un'analisi fattoriale esplorativa (i.e., Explorative Factor Analysis, EFA) sia l'Explorative Graph Analysis (i.e., EGA), un'analisi sviluppata nel contesto della network analysis che permette simultaneamente di valutare aspetti di variabili latenti (i.e, comunità), mantenendo uno sguardo a livello item-specifico. I risultati

mostrano differenze strutturali rispetto ai giovani adulti e saranno discussi assieme a un confronto tra le due tipologie di analisi.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

I cambiamenti dell'architettura cognitiva e della struttura di personalità: gli effetti dell'invecchiamento e del ritiro sociale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 305

What is the role of physiological activation in shaping temporal representations?

Author: Luigi Micillo[1]

Co-authors: Nicola Cellini [2]; Fiorella Del Popolo Cristaldi [2]; Mariagrazia Capizzi [3]; Giovanna Mioni [4]

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[3] *Department of Experimental Psychology - University of Granada; Centro de Investigacion Mente, Cerebro y Comportamento (CIMCYC) - University of Granada*

[4] *University of Padova*

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Temporal representations are fundamental for delving into our daily lives, yet they are susceptible to distortion from various factors, including emotional experiences. This distortion is often attributed to physiological activation, where heightened arousal can accelerate our internal clock, leading to an over-estimation of time. Despite the abundance of studies delving into the association between physiological arousal and time perception, the findings remain fragmented and inconclusive.
Here we would like to explore the relationship between physiological activation and temporal processing. Our study immersed participants in emotional situations, and recorded the fluctuations of their physiological responses as they navigated into timing tasks. Analyzing Heart Rate Variability and Skin Conductance Response, we sought to decode how arousal is intertwined with perception of time.
Our participants watched three emotional videos and performed three temporal tasks. Their physiological response (SCR and HR) was recorded during the task. The Data Analysis involved participants'physiological reactions to the emotional stimuli compared to a resting baseline.
The results showed that negative stimuli were associated with greater physiological response, as well as to a greater dilation of temporal performance when temporal task were presented during the emotional immersion.
Our findings show the impact of emotions and physiological responses on temporal distortions. With these insights, we seek to deepen our understanding of how emotional experiences mold time perception. By elucidating the intricate interplay between physiological arousal and temporal representations, we aim to inspire future research aimed at unraveling the complexities of human time perception.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Simposio di Riferimento: Time Perception: From sensation to memory

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 278

"Do you remember if you took your luggage?" An Immersive Study on Action Complexity and Memory Distortion

Author: Danilo Mitaritonna[1]

Co-authors: Mara Stockner ; Teresa Limata [2]; Francesco Iani [3]; Monica Bucciarelli [4]; Giuliana Mazzoni [5]

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La ricerca esamina l'influenza dei metodi di codifica del ricordo (2D vs VR) e della complessità delle azioni sulla creazione di falsi ricordi, basandosi su studi precedenti che dimostrano la capacità degli osservatori di "riempire"con dettagli mancanti i ricordi attraverso simulazioni mentali attivate dall'osservazione delle azioni (Papenmeier et al., 2019; Ianì et al., 2018). I nostri partecipanti hanno guardato porzioni di video (backward+centrale vs centrale+forward) riguardanti 10 azioni complesse utilizzando una modalità di encoding sia in 2D che in 3D. Successivamente hanno eseguito un compito di riconoscimento composto da immagini delle parti di azione (iniziale, centrale e finale). I risultati hanno mostrato che la parte dell'azione vista (backward+centrale vs. centrale+forward) e la complessità dell'azione predicono significativamente l'accuratezza dei riconoscimenti di immagini già viste. Inoltre, l'interazione a tre vie tra modalità di codifica, tipo di stimolo e complessità dell'azione sui tempi di reazione evidenzia come la modalità di codifica e la complessità dell'azione abbiano influenzato i processi di riconoscimento e recupero. Questo studio conferma la creazione di falsi ricordi basati sul processo di event completion e sottolinea il ruolo della complessità dell'azione nella loro formazione, con implicazioni importanti per i procedimenti legali che si basano su testimonianze oculari.

If you're submitting a poster, would you be interested in giving a blitz talk?:

Yes

If you're submitting a symposium talk, what's the symposium title?:

"Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche"

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 221

Exploring the Interplay Between Interoception and Dissociative Experiences: Insights from a Non-Clinical Population

Authors: Gabriele Vercelli[1]; Anand Rai[1]; Sofia Ciccarone[2]; Giuseppina Porciello[3]; Ilaria Bufalari[4]

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[2] *Università di Roma "La Sapienza"*

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The critical contribution of interoceptive signals to bodily self awareness and self-consciousness has recently been investigated by an increasing number of studies. Also, it has recently been suggested that interoceptive dysfunction can prove to be an important component of many neurological and psychiatric disorders (i.e. dissociative disorders, eating disorders, PTSD, somatic disorders), some of which exhibit overlapping characteristics with disorders characterized by increased dissociative tendencies. This observation hints at a potential underlying connection between interoception and dissociation, the exploration of which could provide valuable insights into the concept of Self and the diagnosis and management of related disorders. Given the significance of this relationship, this study aimed to directly investigate this relationship within a non-clinical population, observing whether scarce interoceptive abilities were associated with a higher tendency for spontaneous and induced dissociative experiences (using the Mirror Gazing Task). Findings showed that the MGT was effective in inducing state dissociation. Furthermore, dissociative feelings negatively correlated with interoceptive sensibility and, similarly, trait dissociation was negatively associated to interoceptive sensibility. Induced or spontaneous non- clinical dissociation, instead, was not associated with changes in interoceptive accuracy (as measured via the Heartbeat Counting Task). These results identify a relationship between non- pathological state and trait dissociation and interoceptive sensibility, specifically interoceptive components related to the trustworthiness and awareness of visceral signals. Considering the important role of interoception in shaping bodily self-awareness and self-consciousness, we are currently investigating the relationship between visceral self-awareness and dissociative traits in Anorexia Nervosa.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Interoception for cardiac and gastric signals: exploring individual differences and their implications for cognitive and mental health

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 197

The Multiverse Approach in Multi-Lab Projects: Robustness Might Matter More Than Statistical Significance in Infancy Research

Author: Giulia Calignano[1]

[1] *University of Padova*

Corresponding Author: giulia.calignano@unipd.it

In this multi-lab study, we explored goal attribution in infants using various data analysis pipelines for pupillometry data from seven laboratories in Europe, the USA, and Canada. The main focus was on the multiverse approach, where data preprocessing is conceptualised as a garden of forking paths, each of which can dramatically affect subsequent statistical outcomes. This method shifts the focus from merely testing for statistical significance to exploring the robustness of findings, which can be influenced by how data are preprocessed. The present blind yet collaborative analysis aimed to examine the robustness of specific interactions (Target × Path in goal attribution). That is, the

hypothesis that infants may deploy more cognitive resources when a hand reaches a familiar goal via a new path, as opposed to reaching for either a new or the familiar goal via a previously known path. However, instead of advocating for a one-best-method for data processing, the multiverse analysis embraces uncertainty by presenting the outcomes of various plausible preprocessing pipelines and exploring how they might impact the results. This approach supports the ongoing shift toward more open scientific practices that prioritise transparency over making groundbreaking but potentially fragile claims. In particular, the combination of the multiverse approach applied to a multi-lab effort acknowledges how different traditions in handling data can lead to opposite conclusions. This contribution stresses the importance of a collaborative strategy that empowers the findings from individual labs with broader, community-based insights.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

The Multiverse of Multi-labs. Methodological and Statistical Aspects of Multi-Lab and Multiverse Studies.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 63

Personalità e Cognizione nell'invecchiamento: indagine attraverso metriche di Graph Theory

Author: Stefano Vicentin[1]

Co-author: Giorgia Cona [1]

[1] *Università di Padova*

Corresponding Author: stefano.vicentin@unipd.it

Historically, aging has been associated with personality impoverishment and cognitive decline. The dedifferentiation hypothesis of cognitive aging suggests that the structure of individuals' cognitive abilities becomes less differentiated in old age. Critically, however, only a few studies considered the changes occurring in personality, cognition, and in their relationship with aging.
This project aimed to investigate this phenomenon by examining the structural characteristics of personality and cognition in different age groups (Young: 18-36; Adults: 36-59; Elderly: 60-100) and their associations. To do so, we analyzed the data of 1630 participants from the Human Connectome Project (HCP), employing a network analysis perspective through Explorative Graph Analysis (EGA) and Network Comparison Test (NCT) to investigate the relationships between cognitive tests and personality indexes in different stages of life.
Compared to Young participants, Adults showed stability in the number of domains identified with EGA (6 domains: High Cognition, Low Cognition, Mental Health, Externalizing Problems, Pain perception), whereas Elderly participants presented a tendency of the network to de-differentiate, as two pairs of nodes (High and Low Cognition; Mental Health and Pain Perception) merged together (Cognition and Health, respectively) resulting in a 4-domains network. The NCT confirmed that the latter network significantly differed from the Young and Adults ones.
Altogether, these findings indicate that the structure of personality and cognition truly changes with aging. However, rather than a mere decline, these alterations can be considered a re-arrangement to optimize available resources and efficiently face the new challenges occurring at older ages.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

I cambiamenti dell'architettura cognitiva e della struttura di personalità: gli effetti dell' invecchiamento e del ritiro sociale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 256

La FlashBulb Memorues Checklist è uno strumento valido per distinguere i ricordi autobiografici veri da quelli falsi?

Author: Fabiana Battista[1]

Co-authors: Antonietta Curci [1]; Ivan Mangiulli [1]; Tiziana Lanciano [1]

[1] *Università degli studi di Bari Aldo Moro*

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L'accuratezza dei ricordi è una delle questioni cruciali in ambito forense. Infatti, nei procedimenti in cui non è possibile avere prove oggettive, i ricordi dei testimoni sono fondamentali per cercare di ricostruire il crimine. I dati mostrano che spesso le condanne ingiuste sono dovute all'accettazione di testimonianze inaccurate (cioè, i ricordi) come vere. Ciò avviene a causa di due problemi. Primo, i professionisti legali non sempre conoscono la letteratura scientifica e, di conseguenza, utilizzano i criteri per valutare se una testimonianza è affidabile sulla base della propria esperienza. Secondo, nonostante i numerosi studi condotti sui falsi ricordi (spontanei e suggestivi), è ancora oggetto di dibattito se e come specifiche caratteristiche dei ricordi possano aiutare a riconoscere i ricordi veri dai falsi. La letteratura sulle flashbulb memories fornisce un contributo significativo al dibattito, poiché si concentra sull'analisi qualitativa e fenomenologica dei ricordi autobiografici emotivi e/o traumatici, come le testimonianze. La Flashbulb Memories Checklist (FBMC) è uno strumento validato per misurare le caratteristiche delle flashbulb memories (ad es., dettagli periferici, sensoriali). Lo scopo del presente contributo è presentare uno studio che indaga la possibilità di applicare la FBMC per la discriminazione dei ricordi autobiografici veri e falsi, con l'ipotesi che i ricordi veri punteggi maggiori agli indici della FBMC rispetto ai ricordi falsi. Saranno discusse le implicazioni pratiche per il contesto forense.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 149

Post-selection Inference in Multiverse Analysis (PIMA): An Inferential Framework Based on the Sign Flipping Score Test

Authors: Livio Finos[None]; Paolo Girardi[1]; Anna Vesely[2]; Daniel Lakens[3]; Massimiliano Pastore[4]; Antonio Calcagnì[5]; Gianmarco Altoè[6]

[1] *University of Venezia*

[2] *University of Bologna*

[3] *Eindhoven University of Technology*

[4] *Dipartimento di Psicologia dello Sviluppo e della Socializzazione, Università di Padova*

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Corresponding Author: livio.finos@unipd.it

When analyzing data, researchers make some choices that are either arbitrary, based on subjective beliefs about the data-generating process, or for which equally justifiable alternative choices could have been made. This wide range of data-analytic choices can be abused and has been one of the underlying causes of the replication crisis in several fields. Recently, the introduction of multiverse analysis provides researchers with a method to evaluate the stability of the results across reasonable choices that could be made when analyzing data. Multiverse analysis is confined to a descriptive role, lacking a proper and comprehensive inferential procedure. Recently, specification curve analysis adds an inferential procedure to multiverse analysis, but this approach is limited to simple cases related to the linear model, and only allows researchers to infer whether at least one specification rejects the null hypothesis, but not which specifications should be selected. In this contribution, we present a Post-selection Inference approach to Multiverse Analysis (PIMA) which is a flexible and general inferential approach that considers for all possible models, i.e., the multiverse of reasonable analyses. The approach allows for a wide range of data specifications (i.e., preprocessing) and any generalized linear model; it allows testing the null hypothesis that a given predictor is not associated with the outcome, by combining information from all reasonable models of multiverse analysis, and provides strong control of the familywise error rate allowing researchers to claim that the null hypothesis can be rejected for any specification that shows a significant effect.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The Multiverse of Multi-labs. Methodological and Statistical Aspects of Multi-Lab and Multiverse Studies.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 309

The embodiment of time: exploring the link between bodily states and temporal experience

Author: Alice Teghil[1]

[1] *University of Rome "La Sapienza"*

Corresponding Author: alice.teghil@uniroma1.it

Substantial evidence supports a causal influence of bodily signals on the experience of time. Here, a series of studies will be presented investigating how interoceptive and sensorimotor processing affect time perception from the range of seconds to the long-term representation of memories across time. First, evidence will be discussed supporting a dynamic perspective on mechanisms involved in processing multiple-second durations, showing that individual differences in interoceptive processing predict timing abilities specifically when the external context is not informative on elapsed time. Data from neuroimaging and neuropsychological studies show that this relation is supported by specific brain correlates, involving the insular cortex and its connectivity with a sensorimotor network responsible for the integration of interoceptive and exteroceptive information. Further evidence suggests that interactions between sensorimotor regions and the medial temporal lobes also

support the retrieval of temporal information from memory. Finally, recent findings from a task-based fMRI study will be presented, showing that memories for one's own life events, but not general semantic memories, are organized according to a sagittal mental timeline, supporting a crucial role of sensorimotor experience related to walking and running in the development of the temporal organization of autobiographical memories. Overall, these findings shed light on how different dimensions of temporal experience are rooted in bodily states, and highlight the need to investigate further how information afforded from interoceptive and exteroceptive channels interact in building our representation of time.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Time perception: from sensation to memory

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 338

Exploring Interoceptive Dimensions and Body Representations in Parkinson's Disease

Authors: Mariachiara Gaita[1]; Giovanni Luca Di Benedetto[1]

Co-authors: Maria Cropano [1]; Carmine Vitale [2]; Alfonsina D'Iorio [1]; Simona Raimo [3]; Liana Palermo [3]; Gabriella Santangelo [1]

[1] *Università degli studi della Campania "Luigi Vanvitelli", Caserta Italia*

[2] *Dipartimento delle Scienze Mediche, Motorie e del Benessere, Università "Parthenope", Napoli, Italia*

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Interoception, the process by which signals originating from within the body are perceived and integrated, is crucial for constructing mental body representations. Despite its significance, the relationship between interoception and higher-order functional body representations (BR), particularly in Parkinson's disease (PD), remains understudied.
This study aims to investigate potential alterations in different BR and conscious interoceptive dimensions in PD.
Thirty participants, comprising 15 individuals diagnosed with PD and 15 healthy controls (HC), underwent a comprehensive neuropsychological assessment. This assessment included tasks tapping action-oriented BR (Hand Laterality Task, HLT), and non-action-oriented BR (Frontal Body Evocation task, FBE). Additionally, participants were assessed for three aspects of interoceptive processing: sensitivity (Self-Awareness Questionnaire), accuracy (Heartbeat Detection Task; HDT), and awareness (accuracy-confidence correlation).
BR and interoceptive dimensions were compared between the groups using non-parametric analysis (i.e., the Mann-Whitney U test).
The HDT scores were significantly lower among patients with PD compared to HC (U=60.000; p=0.029). Similarly, the HLT total (U=59.500; p=0.026), HLT for the right hand (U=60.000; p=0.029), and FBE for the body right side (U=61.000; p=0.033) scores were significantly lower among PD patients compared to HC.
The inner and outer body processing are both compromised in PD. These findings emphasize the significance of assessing interoception and functional BR in PD, whose alterations are potentially associated with insular degeneration, calling for additional research to comprehensively understand their impact on daily functioning and quality of life.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Interoception for cardiac and gastric signals: exploring individual differences and their implications for cognitive and mental health.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 194

L'effetto del ritiro sociale e lavorativo sulla dimensione della struttura di personalità in giovani adulti.

Authors: Maria Esposito[1]; Martina Pastorelli[1]; Michele Scandola[2]

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[2] *Department of Human Sciences*

Corresponding Author: michele.scandola@univr.it

Il ritiro sociale e lavorativo in giovani adulti può portare a ridotte funzioni esecutive (Jin & Suk-Hyun Hwang, 2024), ridotta densità di materia bianca al lobulo parietale inferiore bilaterale, l'insula anteriore destra, la giunzione temporoparietale posteriore, il solco temporale superiore posteriore sinistro, la corteccia prefrontale dorsomediale e la corteccia prefrontale rostrolaterale (Nakagawa et al., 2015). Tra i fattori di rischio che sembrano contribuire all'isolamento sociale, emergono situazioni di povertà, problemi emotivi e impulsività, abuso di sostanze, disabilità e condizioni di salute precarie.
Tali cambiamenti possono andare a modificare la struttura di personalità, riducendone la dimensionalità. Per questo, tramite un'ampia batteria di questionari, sono stati raccolti dati inerenti aspetti demografici e lavorativi, il supporto sociale sia tradizionale che online, la salute mentale, l'autoefficacia in ambito lavorativo e di apprendimento, nonché le dimensioni di personalità tramite la scala Hexaco Adjective Scale (Romano et al., 2023).
I risultati indicano come la dimensione della struttura di personalità sia strettamente legata alla partecipazione ad attività lavorative e scolastiche, e come sia anche collegata alle dimensioni inerenti la rete sociale e aspetti psicopatologici.

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If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

I cambiamenti dell'architettura cognitiva e della struttura di personalità: gli effetti dell' invecchiamento e del ritiro sociale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / **298**

Ricordi (im)morali: la moralità e il senso di colpa impattano la memoria autobiografica

Author: Mara Stockner[None]

Co-authors: Jessica Talbot [1]; Gianmarco Convertino [2]; Danilo Mitaritonna [3]; Giuliana Mazzoni [4]

[1] *Sapienza University of Rome*

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La memoria autobiografica (ABM) è fondamentale per il mantenimento di un concetto di sé positivo e di conseguenza può essere caratterizzata da distorsioni (Conway & Pleydell-Pearce, 2000). Prime evidenze hanno dimostrato che i ricordi di azioni immorali possono essere distorti fino a produrre una cosiddetta "amnesia immorale", la quale sembra essere anche responsabile della persistenza di comportamenti immorali (e.g., Kouchaki & Gino, 2016). Dall'altro lato, il senso di colpa, un'emozione moralmente rilevante, è stato collegato alla messa in atto di comportamenti prosociali. Il presente studio indaga i meccanismi delle distorsioni immorali, associate al senso di colpa, in ABM e, per la prima volta, nel pensiero autobiografico futuro (Episodic Future Thinking). In particolare, in questo studio vengono misurate le caratteristiche testuali di narrazioni di eventi morali ed immorali, passati e futuri, e le relative valutazioni self-report (e.g., vividezza del ricordo, sensi di colpa legati all' azione). Inoltre, un task di decision-making prosociale fornirà un primo contributo sperimentale in merito ai meccanismi cognitivi indagati, illustrando se e come la narrazione di azioni immorali o morali impatta il decision-making. I risultati saranno discussi alla luce delle implicazioni teoriche e pratiche.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **468**

General discussion

Corresponding Author: filippo.gambarota@unipd.it

Symposia / **235**

Temporal memory for complex events

Author: Matteo Frisoni[1]

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Remembering when events occurred is a key component of episodic memory, but the neurocognitive mechanisms underlying this ability remain poorly understood. In a series of studies, we investigated the role of prior knowledge and event representation on temporal memory for complex events. Different groups of participants were asked to report when short video clips extracted from a previously encoded movie occurred on a horizontal timeline representing the duration of the video. When participants watched the entire movie, they were more accurate in placing the video clips. In contrast, watching the movie without the ending resulted in a systematic bias in temporal memory, with participants increasingly underestimating the time of occurrence of the video clips as a function of their proximity to the missing part of the episode. Further experiments show that the direction of this automatic effect depends on which part of the movie is deleted in the encoding session, consistent with the inferential structure of the memory schema, and does not depend on consolidation or reconsolidation processes. Finally, an EEG study aimed to identify the oscillatory dynamics underlying these processes in another group of participants performing the same type of task. Using multivariate analyses, we found an electrophysiological signature of temporal memory precision in the high beta/low gamma band, highlighting the contribution of a widespread network of right-lateralized regions. Overall, these findings shed new light on the underlying mechanisms that support temporal memory for complex events.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Time perception: from sensation to memory

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 401

La validazione di un nuovo strumento italiano per la misurazione della memoria autobiografica (MA-SElf)

Authors: Martina Cerasetti[1]; Giulia Marselli[2]; Maria Casagrande[3]; Carmen Belacchi[4]; Virginia Pierucci[1]; Giuliana Mazzoni[3]; Manuela Berlingeri[1]

[1] *Università degli studi di Urbino Carlo Bo, Dipartimento di Studi Umanistici, Urbino, Italia*

[2] *Università di Roma, "La Sapienza", Dipartimento di Psicologia, Roma, Italia*

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La memoria autobiografica (MA) ricopre un ruolo fondamentale per il funzionamento sociale e per lo sviluppo dell'individuo; secondo Tulving (2002) permette di viaggiare mentalmente nel passato e nel futuro, contribuendo all'acquisizione di una rappresentazione coerente di "sé". La MA è un costrutto multidimensionale con una componente episodica autobiografica (che supporta il recupero di episodi specifici del proprio passato), e una semantica autobiografica (che supporta il recupero di informazioni personali generali).
Nonostante l'importanza del costrutto, dalla revisione della letteratura sugli strumenti psicometrici tarati e standardizzati per valutare la memoria autobiografica è emersa, ad esempio, la mancanza di una batteria tarata e standardizzata sulla popolazione italiana che fornisca misure di MA episodica, semantica con riferimento al suddetto costrutto di Mental Time Travelling. Pertanto, abbiamo condotto uno studio di standardizzazione, taratura e validazione clinica su una popolazione italiana, di un nuovo strumento psicometrico costituto da una intervista semi-strutturata denominata "Memoria Autobiografica del Sé" (MA-SElf), suddivisa in tre sezioni: (1) MA episodica retrograda e prospettica (relativa al passato e alla proiezione nel futuro); (2) MA semantica (riferita al passato remoto e recente); (3) memoria di eventi pubblici non personali (scala di controllo). La ricerca ha

coinvolto 241 partecipanti, di cui 193 controlli, 21 pazienti MCI e 27 clinici (genitori a lutto), bilanciati per genere ed equamente distribuiti per classi di età, a cui è stato somministrato il MA-SElf e una batteria di test neuropsicologici validati. Il contributo presenterà le proprietà psicometriche dello strumento.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Memoria autobiografica: i progressi nella ricerca e le implicazioni pratiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 231

Exploring typical and atypical interoceptive patterns in Hypertension and Gastrointestinal Disorders: Clinical Relevance and Insights for interventions

Author: Andrea Salaris[1]

Co-authors: Chiara Cantoni [2]; Cristina Ottaviani [2]; Giuseppina Porciello [3]; Hajar Al Naqshbandi [2]; Luca Carnevali [4]; Luca Provenzano [5]; Sofia Ciccarone [2]

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Interoception, i.e. the process through which the brain perceives, interprets, and integrates signals originating from the viscera has profound implications not only for cognition and behaviour, but also for physical and mental health. Although research has focused on interoceptive impairments in psychiatric disorders, a variety of medical conditions may show altered perception of visceral signals. Borderline hypertensive (BH) patients, for example, may exhibit increased pain threshold, suggesting abnormal interoceptive processes. In a similar vein, patients with functional gastrointestinal disorders (FGID), a condition in which chronic gastrointestinal symptoms and visceral pain are present without apparent structural abnormalities, may show interoceptive alterations. We conducted two studies to explore interoception in a sample of BH patients and individuals suffering from FGID. We assessed interoceptive accuracy (gastric for FGID, cardiac for BH patients) and sensibility, exploring the relationship between interoception and symptomatologic domains, such as altered pain perception in BH and visceral sensitivity in FGID. Results show that: i) even if BH patients do not have decreased interoceptive accuracy (compared to healthy controls), their pain threshold was negatively associated with interoceptive sensibility; ii) FGID patients exhibited altered gastric interoceptive accuracy (compared to healthy controls) that negatively correlated with anxiety towards gastric symptomatology. These preliminary findings highlight the role of interoception in shaping the symptomatology of BH and FGID patients and suggest that future studies could focus on novel therapeutic targets aimed at enhancing interoception ultimately improving symptoms.

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Interoception for cardiac and gastric signals: exploring individual differences and their implications for cognitive and mental health

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **483**

Discussant (Valentina Cazzato)

Symposia / **462**

General open discussion

Mini-talks / **99**

Il test di permutazione sull'Overlapping

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Nella ricerca in psicologia, la variabilità e la forma delle distribuzioni dei dati sono fattori potenzialmente rilevanti e significativi. Tuttavia, nei test inferenziali più usati, proprio la variabilità e la forma sono oggetto di assunzioni, mentre le ipotesi statistiche riguardano pressoché esclusivamente le medie. Per superare questo stato di cose proponiamo l'utilizzo di un indice, chiamato Overlapping, che misura il grado di sovrapposizione delle distribuzioni empiriche di dati. In altre parole, si stima la densità empirica dei dati e si quantifica la proporzione di densità condivisa dalle diverse distribuzioni. Tale indice, oltre ad essere informativo di per sé, può essere utilizzato in ottica inferenziale grazie all'approccio dei test di permutazione. Attraverso una simulazione Monte Carlo abbiamo dunque confrontato alcuni test tradizionali con i test di permutazione sull'Overlapping: le variabili manipolate sono la differenza tra le medie, quella tra le varianze, la forma delle distribuzioni e la numerosità campionaria. Negli scenari più frequenti della psicologia sperimentale, il test di permutazione sull'Overlapping mostra una migliore performance sia in termini di potenza sia di controllo dell'errore di I tipo.

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Mini-talks / 444

Il ruolo dell'abituazione sensoriale nel comportamento alimentare

Author: Angela Catania[1]

Co-authors: Alessia Santostefano [1]; Vincenza Tarantino [2]; Noemi Passarello [3]; Laura Mandolesi [3]; Massimiliano Oliveri [4]; Patrizia Turriziani [2]

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Un fattore che interviene sul senso di sazietà e di controllo della fame durante l'assunzione di cibo è l'abituazione sensoriale, intesa come una riduzione della risposta fisiologica alla presentazione ripetuta nel tempo di cibo. L'obiettivo di questa ricerca è stato quello di esaminare la relazione tra profili di percezione ed abituazione a stimoli di varia natura, non necessariamente alimentari, e le tendenze a condotte alimentari disturbate. A tale scopo si è chiesto ad un gruppo di partecipanti di sesso femminile di età compresa tra i 18 e i 40 anni, senza diagnosi di disturbi della condotta alimentare (DCA), di compilare un questionario sulla misura dell'iper- o ipo-sensibilità sensoriale (il Sensory Perception Quotient, SPQ-35), un questionario sull'abituazione sensoriale (il Sensory Habituation Questionnaire, S-Hab-Q) e un questionario per la rilevazione di comportamenti DCA (EDI-3). Data la frequente associazione tra DCA e alterata sensorialità nelle persone con autismo, si è inoltre deciso di indagare i tratti autistici del campione attraverso il questionario Ritvo Autism Asperger Diagnostic Scale (RAADS-R). I risultati hanno mostrato che un maggiore tempo di abituazione a stimoli sensoriali, in particolare tattili, olfattivi e gustativi, era associato a punteggi più elevati alla scala di valutazione dell'impulso alla magrezza e dell'insoddisfazione per il proprio corpo dell'EDI-3. La sensibilità sensoriale e i tratti autistici da soli non spiegavano i punteggi. Questi dati preliminari suggeriscono che la presenza di profili di abituazione sensoriale alterati possono avere un ruolo nel mediare i DCA e potrebbero essere un potenziale target di intervento.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks / 145

From Pixels to Power: Exploring virtual Embodiment and Priming effects in affecting leadership persuasive skills

Author: Althea Frisanco[1]

Co-authors: Chiara Cantoni [2]; Luca Provenzano [1]; Salvatore Maria Aglioti [2]

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In the realm of personal and professional growth, role models exert substantial influence, shaping behaviors and aspirations. Immersive virtual reality gets us closer to role models in an otherwise impossible way, allowing us to "wear" virtual bodies resembling successful characters whose valuable traits we aim to emulate. In previous research, we investigated the attitudinal changes following the embodiment of an avatar resembling a successful leader, i.e., Angela Merkel. In this ongoing study, we explore behavioral and physiological changes in an immersive and arousing virtual scenario, where female participants are asked to give a public persuasive speech. Adopting a within design experiment, participants experience three embodiment conditions: i) the Merkel avatar (Leader Embodiment condition LEc), ii) the Self-avatar (Self-Embodiment condition SEc) and iii) the Self-avatar while exposed to a picture of Merkel (Priming condition P-SEc). For each condition, we measure physiological responses (pitch, heart rate variability), self-attitude (self-related leadership traits, self-efficacy), posture and stage management, public speaking skills and speech length. We designed the experiment to replicate and expand Latu et al. (2013) findings, suggesting participants in P-SEc being more performative compared to a no-priming-condition. Here, we expect better performance in LEc compared to SEc, supporting the Proteus effect literature according to which avatar's body features shape behavior. Finally, differences between LEc and P-SEc will help to tease apart embodiment from priming, shedding further light on the mechanisms underlying the Proteus effect.

If you're submitting a poster, would you be interested in giving a blitz talk?:

Yes

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks / 181

SNARC-like effects across different temporal ranges

Authors: Alberto Mariconda[1]; Mauro Murgia[1]; Matteo De Tommaso[2]; Tiziano Agostini[1]; Valter Prpic[3]

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Tempo in music context is defined as the speed of an auditory sequence. Recent findings revealed a SNARC-like effect for tempo, suggesting that tempo and space are associated (De Tommaso & Prpic, 2020; Mariconda et al., 2024). Indeed, people tend to respond faster with a left-key to relatively slow tempos and faster with a right-key to relatively fast tempos. In particular, a work by De Tommaso and Prpic (2020) systematically investigating the SNARC-like effect across different tempo ranges revealed a clear effect only within the fast tempo range. In the present study, the work by De Tommaso and Prpic (2020) was conceptually replicated, further investigating the association between space and tempo across different tempo ranges (40-200 bpm "full", 40-104 bpm "slow"or 133-201 "fast"). Specifically, Experiment 1 aimed to test the occurrence of a SNARC-like effect in the full tempo range, whereas Experiment 2 aimed to further investigate its occurrence in the slow and fast tempo ranges, separately. Experiment 1 revealed a spatial association in the full tempo range. In Experiment 2 the occurrence of the SNARC-like effect was confirmed in the fast tempo rang but contradictory results emerged in the slow tempo range. Overall, these results highlight a consistent SNARC-like effect for full and fast tempo range, whereas further research is needed to clarify this phenomenon in the slow tempo range.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Mini-talks / 56

Do musicians have better short-term memory than nonmusicians? A multi-lab study

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Musicians are often regarded as models of brain plasticity and associated cognitive benefits. This emerges when expert musicians are compared with nonmusicians. A frequently observed finding is a short-term memory advantage of the former over the latter. Although meta-analyses report that the effect size of this advantage is medium, no study was adequately powered to estimate reliably an effect of such size. This multi-lab study has been ideated, realised, and conducted by several researchers working on this topic. Our ultimate goal was to provide a community-driven shared and reliable estimate of the musicians'memory advantage (if any) and set a method and a standard for future studies in neuroscience and psychology comparing expert musicians and nonmusicians. Thirty-four research units are participating in the project. Participants will complete musical, verbal, and visuospatial spans to assess short-term memory; n-back task for executive functions, raven matrices and WAIS-IV vocabulary for intelligence, and other tasks to assess individual differences in musicality, personality, and socio-economic status. We expect to collect over 700 expert musicians and 700 paired nonmusicians in a laboratory experiment. We expect to replicate the results of the meta-analysis on short-term memory of musicians and nonmusicians, namely, a large musicians' advantage in musical short-term memory, and a medium advantage in verbal and visuospatial short-term memory. This project aims to set the basis for sound research practices in studies comparing musicians and nonmusicians, and contribute to the ongoing debate on the possible cognitive benefits of musical training. Results will be available at the conference.

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Mini-talks / 213

Evaluating circadian pattern of executive functions through the Attentional Demands Task (AD-Task).

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Co-authors: Martina Marcaccio [1]; Simone Migliore [1]; giuseppe curcio [2]

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Aim: To assess circadian fluctuations in healthy subjects in single attentional components (selective/divided) and switching between them, using the new AD-Task instrument. Materials: 18 participants (16 F) completed the AD-Task at different times of the day and were monitored on indices of sleep quality and sleepiness level. Method: The entire experimental protocol was conducted over two days: on day 1 participants performed a brief familiarization phase with the AD-Task; on day 2 they assessed their sleepiness level and then performed the full version of the AD-Task at different times. Task execution took about 50 minutes, and performance was evaluated by considering both reaction time (RT) and accuracy indices (Hit Rate; d'). Results: All participants reported good sleep quality and stable subjective sleepiness indices. A repeated-measures ANOVA with the within-subject factors "TIME", "CONDITION 'and 'ATTENTIONAL DEMAND TYPE"showed an interaction effect between TIME and ATTENTIONAL DEMAND TYPE factors on all variables considered (RT= F (3,51) =13.958, p<.001; HIT RATE= F (3,51) =5.362, p=.003; d' = F (3,51) =14.332; p<.001). Post-hoc analyses revealed better performance for both RT and accuracy in selective attention than in divided attention. In addition, a good sensitivity to circadian fluctuations was more evident in divided attention, which showed greater difficulty in achieving optimal performance in the early morning and post-lunch phase, than in selective attention, which maintained a more stable and optimal performance, peaking in the late morning. Conclusions: In the circadian context, attentional components behave differently, and the AD-Task effectively measures both selective and divided attention.

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks / 232

Cradling Behavior and Social Cognition: Implications for Face Processing

Authors: Anna Concetta Spina[None]; Valerio Manippa[None]; Ester Cornacchia[None]; Giorgia Francesca Scaramuzzi[None]; Martina Ventura[None]; Gianluca Malatesta[None]; Davide Rivolta[None]

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The Left Cradling Bias (LCB) or preference entails preference in positioning an infant on the left side of the body. LCB seems to facilitate the monitoring of the expressive left side of both the infant's and mother's faces, thereby activating the right hemisphere specialized for socio-affective processing and face perception and suggesting cradling as an index of hemispheric lateralization.
LCB is associated with typical socio-emotional functional lateralization, contrasting with individuals who cradle either on the right or bilaterally, such as those diagnosed with autism spectrum disorders (ASD). Individuals with prosopagnosia, a condition characterized by difficulties in recognizing faces, and those with ASD share commonalities in facial processing deficits and altered neural activation patterns. Congruently, both groups lack the typical right lateralization for face processing.
The observed association between LCB and ASD prompts the possibility of a link between cradling lateral preference and face processing impairment. This potential link may stem from variations in lateralization patterns, influencing cradling behavior and how the brain processes facial information. Moreover, the question arises whether individuals with prosopagnosia display attenuated processing of socio-emotional stimuli due to face recognition and discrimination deficits, therefore affecting cradling preference.
In this investigation, participants underwent thorough several assessments focusing on social cognition, social networks, personality traits, and face recognition and discrimination. Preliminary findings regarding the association between cradling behavior, face processing, and social cognition are discussed.

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Mini-talks / 367

Fostering spatial navigational abilities in children through a new computer game based on observational learning: a pilot study

Authors: Luca Pullano[1]; Santo Di Nuovo[2]; Francesca Foti[2]

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Spatial navigation is a complex, fundamental ability crucial to daily life and it develops gradually during childhood. Some studies showed that it is possible to promote the development of spatial navigational abilities through specific training. In a recent study, we demonstrated that training based on observational learning - implemented in a real environment - fostered an earlier acquisition of high-level spatial navigational skills in children. The main aim of the present study was to investigate whether the same beneficial effect could also be obtained in a virtual environment. With this aim, we implemented a new navigational computer game based on observational learning that we administered to 19 children (9 M and 10 F, mean age = 7.07± 0.33). To verify the training effect and to investigate the possible generalization to new environments, we administered - or not - the observational training and tested children on a modified version of the Open Field with multiple rewards task. Two navigational tasks were used: one for the egocentric encoding (route-knowledge task) and another one for the allocentric encoding (configural knowledge task). We found that observational training improved both egocentric and allocentric encoding, as testified by some measured parameters, such as time employed to solve the task, distance virtually walked, and search efficiency. An improvement was also observed in the new environment, indicating the presence of a generalization effect. Overall, these preliminary findings seem to confirm the beneficial effect of observational training and extend its effectiveness even in a virtual environment.

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks / 234

Entraining Gamma Oscillations: A Comparative Exploration of the Effects of 40Hz and 60Hz Rhythmic Auditory Stimulation

Authors: Giorgia Francesca Scaramuzzi[None]; Gaetano Scianatico[None]; Ester Cornacchia[None]; Anna Concetta Spina[None]; Michael A. Nitsche[None]; Giancarlo Logroscino[None]; Davide Rivolta[None]; Valerio Manippa[None]

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Gamma oscillations (γ, 30-120 Hz) have been implicated in various cognitive functions and are associated with multiple neuropsychiatric disorders. Non-invasive gamma entrainment using sensory

stimuli has emerged as a potential therapeutic approach, particularly for Alzheimer's Disease patients. However, the comparative efficacy of different gamma frequencies sensory stimulation in entraining endogenous gamma oscillations remains under-explored.
The objective of this study is to investigate the effects of 40 Hz and 60 Hz rhythmic auditory stimulation (rAS) on steady-state power spectrum density (PSD) and aftereffects via electroencephalography (EEG). Employing a crossover within-subject design, young-adult healthy participants received both stimulation frequencies randomly. EEG data were recorded pre-stimulation, during stimulation, and post-stimulation.
The analysis, focused on the effects of 40Hz vs. 60Hz auditory stimulation on PSD, revealed a gradual increase in gamma band entrainment throughout the 40Hz and 60Hz rAS, persisting, as an aftereffect, in the minutes immediately following the stimulation. Particularly, 40Hz rAS increased low-gamma (30-47Hz) power across the whole brain, especially in the temporal cluster. Moreover, the high-gamma (53-70 Hz) power analysis revealed a cluster-dependent entrainment with 60Hz rAS increasing high-gamma mainly within the central cluster, while 40Hz rAS within the temporal cluster.
In conclusion, this study aims to elucidate the neural responses to different rAS frequencies, as the potential to entrain neural frequencies through sensory stimulation offers the opportunity to explore the link between brain oscillations and cognitive functions, which could have significant implications for neuroenhancement and rehabilitation programs.

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Mini-talks / 223

Can a social robot reduce the cognitive load related to daily-life activities? A pilot study with healthy adults

Authors: Simone Varrasi[1]; Roberto Vagnetti[2]; Nicola Camp[2]; John Hough[2]; Alessandro Di Nuovo[3]; Sabrina Castellano[1]; Daniele Magistro[2]

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Some populations, such as older people, struggle with the cognitive load involved in daily activities. This is related to the limits of human working memory when mental resources are simultaneously stressed by a task. In this scenario, artificial agents have been increasingly integrated in several environments by designing supportive human-robot interactions (HRI), but most of literature focused on the use of co-bots in work settings. This pilot work, therefore, intended to verify whether HRI could help with the reduction of cognitive load related to daily activities.
Twelve healthy adult participants completed order-randomized dual-task cognitive exercises at different conditions: individually, with the support of a social robot (HRI), and with the support of a human-human interaction (HHI). Both HRI and HHI conditions were designed to produce three different levels of cognitive load: low, medium, and high.
The results showed that under low cognitive load, completing the task individually led to similar accuracy compared to HRI, but importantly, the HRI condition induced a significantly lower mental demand ($Fr = 26.2$, $p < .001$) and faster execution times ($Fr = 13.2$, $p < .01$). As expected, medium and high cognitive load produced increasing levels of mistakes. The comparison between HRI and HHI indicated that under high cognitive load the HRI condition was perceived as less frustrating ($Fr = 10.2$, $p < .01$).
This suggests people may benefit from the support of social robots during daily tasks of varying cognitive load levels, but the effectiveness of such approach depends on HRI cognitive demands.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks / 303

Continuity between the real and virtual body during action observation enhances motor cortical excitability

Author: Francesca Frisco[1]

Co-authors: Marta Matamala-Gomez [2]; Giacomo Guidali [3]; Carlotta Lega [4]; Alejandro Beacco [5]; Nadia Bolognini [3]; Angelo Maravita [3]

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The sense of body ownership (i.e., the belief that the body belongs to oneself) is fundamental in body perception, involving the integration of different sensory inputs. Virtual Reality (VR) manipulations facilitate the alteration of body ownership. Notably, a decrease in ownership sensations occurs over the virtual body in the presence of a visual discontinuity between the hand and the body of the avatar. Recent research further revealed how bodily illusions can manipulate body ownership, concurrently leading to changes in motor cortex excitability. Here, we hypothesized that the degree of body continuity between one's physical body and the observed virtual body may also impact motor cortex excitability during action observation. Specifically, we investigated whether observing virtual movements from a first-person perspective in different conditions of body continuity affects cortical excitability in the primary motor cortex (M1) using transcranial magnetic stimulation (TMS). Participants immersed in VR environments observed left-hand movements in three conditions that differed in the amount of body continuity between the real and virtual body (Full body; Upper Limb; Hand Detached). Motor Evoked Potentials induced by TMS pulses over the right M1 were recorded during action observation to measure motor cortex excitability. Embodiment sensations were assessed through a questionnaire. Results showed that variation in body continuity affects embodiment sensations, along with increasing corticospinal excitability when virtual body continuity is higher (i.e., in Full-Body and Upper Limb compared to Hand Detached conditions). Embodiment sensations mediated this effect, supporting the crucial relationship between body perception and motor cortical excitability.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks / 53

How much flexibility do we need? Investigating the use of polytomous IRT models in psychological measurement.

Author: Giovanni Bruno[1]

Co-authors: Gioia Bottesi [2]; Daniela Di Riso [3]; Andrea Spoto [2]

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Measurement models based on Item Response Theory (IRT) have garnered substantial credit in the field of psychometrics and psychological testing. When dealing with items on a polytomous response scale, opting for a IRT model requires considering a number of theoretical assumptions, such as the nature of the measurement scale or the type of investigated construct. A typically adopted solution is the application of IRT model with few assumptions (e.g., the Graded Response Model), which allow greater flexibility but that may not reflect the theory that guided the psychometrician in developing the psychological scale. This research delves into this topic comparing three IRT models for polytomous items with an increasing level of flexibility (Rating Scale Model, Graded Response Model, and Partial Credit Model) in terms of goodness of model and item fit, accordingly to a simulative and an applied case using real data. The main aim of the present contribution is to underline that IRT model selection (a-priori or following a model comparison approach) holds the potential to influence the description of a psychological construct, which may have a series of repercussion if applied to psychopathological assessment. Interestingly, results derived from the administration of the tool may not match its theoretical assumptions, leaving room for theoretical and psychometric rethinking. In conclusion, the strength of a "good"IRT model comes not only from the results of statistical testing, but –at least in the first instance - also from its consistency with the foundation theory that led the scale development.

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Medication adherence among psychiatric patients treated with antidepressants: an exploratory study

Authors: Giuseppe Alessio Platania[1]; Sofia Francesca Aprile[1]; Claudia Savia Guerrera[1]; Simone Varrasi[1]; Francesco Maria Boccaccio[1]; Vittoria Torre[1]; Maria Salvina Signorelli[2]; Antonino Petralia[2]; Alessandro Rodolico[2]; Filippo Caraci[3]; Concetta Pirrone[1]; Sabrina Castellano[1]

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Non-compliance encompasses various behaviours and attitudes, ranging from outright rejection of drug therapy to incorrect usage or premature discontinuation, potentially impacting symptom severity. In psychiatric settings, patients' reluctance to adhere to medication may stem from a lack of insight, fostering unfavourable views on pharmacotherapy. This study explores the connections between adherence to antidepressant drugs, insight, and attitudes toward medication. The participant pool included both inpatients and outpatients, including individuals with defined psychiatric diagnoses and excluding those with intellectual disabilities, major neurocognitive disorders, or psychotic acute relapses. The sample was made of 41 patients diagnosed with mood disorders, both unipolar (90.2%) and bipolar depression (9.8%). It included 22 female and 19 males. The mean age was 51.5

(SD=15.6), ranging from 22 to 83 years old. Adherence was assessed using the Brief Adherence Rating Scale's (BARS) Visual Analog Scale (VAS) item, attitude towards drugs with the Drug Attitude Inventory (DAI), and insight with the Insight Orientation Scale (IOS). Analysis revealed a significant direct correlation between adherence and drug attitude (ρ=0.844; p=<.001). Adherence showed a significant direct correlation with both DAI subscales which assess subjective responses to antipsychotics (ρ=0.633; p=<.001) and subjective attitude towards treatment (ρ=0.756; p<.001). While the IOS scale lacked a significant correlation with BARS total score and DAI global score, it did exhibit a significant correlation with DAI factor II (ρ=0.348; p=0.026). These findings emphasize the central role of patients' drug attitudes in influencing medication adherence.

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Exploring the Interplay between Interoception and Navigational Abilities: Insights from Virtual and Real Environments

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Despite significant progress in understanding human navigation, debates persist regarding the role of different sensory inputs and their contribution to individual differences in navigational performance. While recent research indicates that humans predominantly rely on visual information (Huffman and Ekstrom, 2019), empirical evidence supports the significance of body-based cues as well. The environmental scale and kind of navigational tasks may explain the mixed findings.
Yet, studies have overlooked interoceptive information processing and its potential impact on navigational abilities. Here, we present two studies aiming to explore the role of interindividual variability in interoceptive information processing, in terms of interoceptive accuracy (IAcc), awareness (IAw), and sensitivity (ISe), in performing navigational tasks.
In study 1, 110 participants completed desktop-based virtual navigational tasks probing landmark, route, and survey knowledge alongside IAcc, IAw, and ISe measures. In study 2, 50 participants completed a similar protocol, but the navigational tasks involved moving in a real environment.
The recognition of landmarks seen in a virtual environment was negatively associated with IAcc. However, individuals with higher IAcc retraced a path seen in the real environment faster (study 2). This suggests that while a heightened ability to accurately perceive bodily sensations may detract from attending to external cues, at least in desktop-based virtual environments, it enhances navigation in tasks that are based on an egocentric frame of reference and involve walking in a real environment. These findings underscore the complex relationship between the processing of body-based information and navigational abilities, offering insights to explain individual differences in spatial navigation.

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Effects of Viewing Simulated Natural and Urban Environment on Affect and Cognition in a Sample of Young Adults

Authors: Elisabetta Ricciardi[1]; Luigi Tinella[2]; Sergio Traficante[3]; Rosa Napoletano[3]; Antonella Lopez[4]; Alessandro Oronzo Caffò[5]; Andrea Bosco[6]; Giuseppina Spano[7]

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Virtual reality, in both 2D and 3D formats, has become increasingly prevalent in psychological research, providing immersive environments to explore human behavior, emotion, and cognition. While studies often highlight the restorative benefits of virtual nature environments over urban ones, the effects on affect and cognitive outcomes are still debated. Additionally, there is limited research on the potential benefits of social sharing in simulated natural environments for affect and cognition. This study aimed to investigate the effects of viewing 2D simulated natural, urban, or neutral (control) environments on affective and cognitive outcomes, and whether these effects vary based on shared or solo experiences. Using a 3x2x2 mixed design, 164 university students were enrolled, with exposure conditions manipulated as shared vs. solo experiences and repeated measures assessing changes from pre-exposure to post-exposure. Results indicated that participants exposed to natural environments had higher levels of restorativeness. Furthermore, in the solo journey condition, participants exposed to natural virtual environments showed higher scores in certain attention outcomes (i.e., Adaptive Tachistoscopic Traffic Perception) compared to those in urban environments. The findings suggest that natural virtual environments could have beneficial effects on attention outcomes, and individuals exposed to urban environments tend to perform worse when they are in solo experience compared to when they are in shared experience. These insights underscore the importance of considering social sharing and environmental factors in virtual reality research for understanding their impacts on human behavior, affect, and cognition.

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Sensibilità all'Affective Touch e reattività vagale: uno studio in pazienti con Mild Cognitive Impairment da malattia di Alzheimer

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L'Affective Touch (AT) è una modalità tattile affettiva mediata dalle fibre C-tattili (CT), le quali rispondono a stimoli tattili lenti, simili a carezze, evocando una sensazione di piacevolezza e promuovendo un incrementato Heart Rate Variability (HRV). Secondo il classico modello di Braak, il processo neurodegenerativo nella malattia di Alzheimer (AD) coinvolgerebbe le cortecce sensoriali solo in fasi avanzate della malattia, mentre l'elaborazione di stimoli sensoriali complessi, come l' AT, potrebbe risultare alterata più precocemente. Nel seguente studio sono quindi stati reclutati 20 pazienti con Mild Cognitive Impairment (MCI) dovuto a AD diagnosticati con biomarcatore e 20 soggetti sani appaiati per età e sesso. Tutti i partecipanti sono stati inizialmente sottoposti ad una batteria quantitativa sensoriale per l'assessment di sensibilità tattile, acuità tattile, nocicezione ed interocezione. Il classico protocollo AT è stato poi utilizzato per valutare la preferenza, in termini di piacevolezza, tra stimolazioni CT-ottimali (i.e., 3cm/s) e non (i.e., 30cm/s). Infine, è stata valutata la risposta comportamentale (in termini di piacevolezza) e psicofisiologica (in termini di HR e HRV) a 16 minuti di stimolazioni CT-ottimali. I risultati non hanno evidenziato differenze tra gruppi nello screening iniziale. Nonostante entrambi i gruppi abbiano mostrato una preferenza per le stimolazioni CT-ottimali, nei pazienti MCI è stata osservata una specifica alterazione nella risposta a stimolazioni prolungate, caratterizzata da una ridotta percezione di piacevolezza e da un invariato indice di HRV. I risultati emersi suggeriscono che un'alterata sensibilità all'AT ed una ridotta reattività vagale a stimoli affettivi possano rappresentare indicatori precoci del declino cognitivo patologico.

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Le abilità di calcolo nella vita quotidiana: la risposta corretta non è sempre quella esatta!

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Tipicamente, il "far di conto"è considerata un'abilità che ci permette di svolgere velocemente e accuratamente le operazioni aritmetiche. In realtà, il calcolo esatto è solo il più noto e tardivo dei processi solutivi, mentre stimare il risultato di un operazione (e.g., 28+17 < o > 50?) o di una grandezza (e.g., Quante albicocche ci sono in 1 kg?) sono competenze che seguono traiettorie evolutive proprie, in parte anche precoci, ma la cui rilevanza è relativamente sottovaluta. Si tratta in ogni caso di abilità multicomponenziali che sappiamo differenziarsi sia in termini cognitivi che neurofunzionali, ma che in parte rimangono poco indagate. Inoltre, nonostante quanto dichiarato nelle linee guida nazionali, sia in ambito educativo che clinico, la capacità di utilizzare queste competenze in contesto ecologico è raramente oggetto di attenzione. In uno studio esplorativo su un ampio campione di giovani adulti, sono state indagate le abilità di calcolo aritmetico (e.g., 34+8?) , di calcolo situato (e.g., "Hai 2 ore e mezza di tempo prima di dover uscire e devi ancora ascoltare una lezione di 1 ore 45 minuti. Quanto tempo libero ti resta?") e di stima di grandezze (e.g., "Quanto pesa una bicicletta?") con l'intento di verificare l'esistenza di associazioni e differenze tra tipo di calcolo richiesto e tipo di dimensione attesa (i.e., tempo, finanze, numerosità, spazio, capienza, peso, ecc.). Nella discussione dei risultati si darà ampio spazio alla rilevanza delle differenze individuali tenendo conto della variabilità nelle traiettorie di sviluppo (e.g., presenza o meno di un DSA).

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Atteggiamenti ideologici, tratti di personalità e percezione della minaccia da COVID-19: uno studio correlazionale

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La pandemia di COVID-19 ha generato interrogativi sugli antecedenti ideologici e personologici, delle risposte comportamentali rispetto alla prevenzione della minaccia pandemica. Dopo aver osservato che l'autoritarismo di destra (RWA) prediceva positivamente risposte di contrasto alla pandemia, mentre, l'orientamento alla dominanza sociale (SDO) prediceva negativamente tali risposte, abbiamo ipotizzato che: l'SDO mediasse la relazione tra poca umiltà e sottovalutazione della minaccia pandemica; l'RWA intervenisse nella relazione positiva tra quest'ultima e paurosità. Per verificare ciò, abbiamo reclutato online 3294 partecipanti di età compresa tra i 18 e i 70 anni, equamente distribuiti per genere e provenienti da: Australia, Colombia, India, Italia, Nigeria, Regno Unito, Stati Uniti e Svezia. Abbiamo adoperato la SDO scale, la RWA scale, una scala ad hoc per la preoccupazione per il COVID-19 e gli aspetti "Modestia"e "Paurosità", rispettivamente dei tratti di personalità "Umiltà/Moralità"e "Nevroticismo"dell'HEXACO. Per testare l'unidimensionalità delle misure, abbiamo dapprima condotto delle analisi fattoriali confermative (CFA) per ogni scala, che hanno prodotto dei buoni indici di fit. Successivamente abbiamo testato le nostre ipotesi con i Modelli di Equazioni Strutturali (SEM). I risultati confermano le ipotesi sull'SDO: persone poco modeste possiedono una visione più gerarchica della società, preoccupandosi meno della pandemia. L'RWA, invece, non sembra predire stabilmente tale preoccupazione, non mediandone inoltre la relazione con la paurosità. Questi risultati ci aiutano a comprendere quali tratti di personalità predispongano a reagire alla minaccia pandemica, chiarendo il ruolo mediatore degli atteggiamenti ideologici. Inoltre, indicano come la relazione tra conservatorismo e risposta alla pandemia, vari tra paesi diversi.

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Un approccio alla power analysis con tempi di reazione ed ipotesi informative

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Con questo contributo ci proponiamo di illustrare un approccio semplice per condurre una power analysis in un contesto sperimentale frequente nell'ambito della psicologia cognitiva. Nello specifico l'obiettivo è di illustrare la procedura in riferimento ad una interazione 2x2. L'aspetto innovativo del nostro approccio si basa sulla stima dei parametri e su prior definite su un intervallo che definisce i valori per i quali gli effetti vengono considerati nulli. Per illustrare l'approccio calcoliamo la power analysis scegliendo cinque numerosità campionarie e per ciascuna simuliamo un set di dati. Stimiamo quindi i parametri del modello utilizzando le prior scettiche sulla base delle quali, assumiamo che, con una probabilità del 90% i coefficienti di regressione cadano nell'intervallo nullo. Questo intervallo definisce in pratica i valori per i quali gli effetti si considerano non significativi. In seguito, per ciascun parametro calcoliamo gli intervalli di credibilità (CI) al 90% e 80%, ovvero gli estremi che contengono queste due porzioni di distribuzioni a posteriori. La scelta dei valori 80% e 90% è giustificata dal limite dei soggetti che si potranno reclutare e dal fatto che gli effetti attesi sono piuttosto piccoli. Nello spirito originario di Neyman e Pearson, abbiamo considerato che questi livelli siano un buon compromesso tra costi e benefici. Eventualmente, potremmo pensare di utilizzare un terzo livello, al 70%, per aumentare ulteriormente la potenza.

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The relation between the semantic-memory network structure and creativity across ages

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The emergence of network models allowed researchers to investigate the structure of semantic memory, with recent studies highlighting that highly creative people are characterized by more flexible semantic networks compared to low creatives, with more connected, less modular, and less distance between nodes (Kenett et al., 2014). Other evidence pointed out that semantic networks are subjected to age-related stiffening, showing semantic structures featuring more segregated and less connected networks (Cosgrove, 2023).
The aim of this study was to investigate the relationship between semantic memory networks, creative performance and creative success in young (N= 81, Age = 18-26) and old adults (N=78, Age = 70-90). Participants completed two verbal fluency tasks and two free association tasks which results were used to estimate the indexes of semantic networks through a correlation-based network method. Then both groups performed an Alternative Uses Task, a measure of divergent thinking, and the Kaufman Domains of Creativity Scale (Kaufman, 2012), a questionnaire measuring creative success in different domains.
Preliminary analyses (conducted in R) performed on the sample of the young participants replicated the typical network structures characterizing high and low creative individuals. Further, more specific data analyses are still undergoing, testing the hypotheses that: 1) network structures of old

participants are less flexible compared to young participants; 2) network structures of high creative achievers do not differ between young and old participants. This work could help unravelling the complex role of semantic network and of its development in the definition of creative performance at different ages.

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Uno studio sulle abilità di ChatGPT a simulare depressione

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Il malingering è un fenomeno ben noto che consiste nella simulazione, esagerazione o minimizzazione intenzionale dei sintomi medici e/o psicologici motivata dal voler ottenere un guadagno esterno. Questo fenomeno è assai frequente in contesti psicologici, quando, ad esempio, una persona è sottoposta a valutazione psicologica, avendo pertanto forti implicazioni sociali. Il rilevamento di malingering è particolarmente difficile quando la persona che sta simulando, esagerando, o minimizzando dei sintomi conosce bene la condizione simulata. Insieme al web, l'Intelligenza Artificiale può costituire una fonte dove reperire informazioni di ogni genere. Pertanto, può costituire un aiuto per coloro che intendono imparare a ingannare senza essere scoperti durante una valutazione psicologica. Lo studio condotto ha avuto l'obiettivo di comprendere se ChatGPT, un chatbot altamente conosciuto e utilizzato da un gran numero di persone, è in grado di simulare depressione. Abbiamo testato questa domanda istruendo un gruppo di persone e ChatGPT a simulare depressione durante la compilazione del Multiphasic Personality Inventory-2 (MMPI-2). I nostri risultati mostrano che sia gli umani sia ChatGPT sono stati in grado di riconoscere i sintomi depressivi e di fingere di soffrirne mentre compilano il MMPI-2, sebbene le scale di validità del MMPI-2 riconoscano malingering, soprattutto nelle risposte fornite da ChatGPT. Inoltre, il modo di rispondere alle istruzioni di simulazione differisce tra umani e ChatGPT a riprova che il ragionamento sottostante ai sistemi di Intelligenza Artificiale non è paragonabile a quello umano.

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An fMRI investigation on sensory-motor representations of audiovisual speech

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The interaction of sensory-motor features in the emergence of categorical audio-visual speech remains underexplored. Recent intracranial electrocorticography recordings suggest that discrete portions of dorsal premotor and motor cortices might represent acoustic phonetic features of speech. However, it is unclear whether pure acoustic or visual features are represented in these regions since these features are often described in terms of articulatory tracts.
This pilot study aimed at: (1) characterizing the interaction between sensory-motor phonological features in the psychological speech organization by comparing perceptual and categorical similarity patterns in Italian native speakers (2) test the preliminary hypothesis that audio-visual speech multimodally recruit auditory, visual and pre-/motor regions. Twenty-four participants identified and categorized audio-visual consonant-vowel signals based on phonetic or visemic features before undergoing an fMRI odd-ball task using the same stimuli.
Behaviourally, both tasks showed reliance on visual (lip-shape) information, suggesting that visual information plays a key role in speech perception and categorization despite the sensory modality speech is conveyed with. Neurally, we observed that both auditory and visual speech information recruited auditory and visual regions in the superior temporal gyrus and middle occipito-temporal junction, as well as in a portion of the pre-/motor cortex overlapping with area 55b, recently described as an area that participates in the coordination of complex behavior, regardless of specific body parts involved. These observations provide a first attempt to better characterize the nature of phonological representations by taking into account the interactions between sensory-motor features of speech and extending the research scope beyond unisensory auditory regions.

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Italian Validation of the Scientific Reasoning Scale (SRS): Classical test theory and Item Response Theory

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Scientific reasoning (SR) is a crucial aspect in daily life, influencing individuals' ability to pose scientific questions, collect data, critically evaluate information, and draw informed conclusions. There are few tools for measuring SR, tailored to specific age groups or countries, which limits the comparability of results due to the unique characteristics of these tools. The Scientific Reasoning Scale (SRS), validated in the US and Turkey, measures an individual's ability to evaluate scientific evidence. To facilitate generalization across diverse populations, it is important to validate this scale in different cultural contexts.
This study aims to validate the SRS in the Italian context on a sample of 600 Italian adults aged 18

and over. A questionnaire was administered via Qualtrics. This validation process, following the approach of the unified view of validity, aims to establish the scale's validity across various sources of evidence: factorial structure, generalizability, convergent validity, criterion validity, known-group evidence, reliability. To achieve this, two measurement models will be applied as complementary approaches: Classical Test Theory and Item Response Theory. This choice is motivated by the idea that these models can be applied jointly to obtain different and triangular information, as suggested by Bean and Bowen (2021), and to provide more differentiated validity evidence, as suggested by the contemporary view of validity. The results will allow verification of the adequacy of the adaptation of this instrument and potentially fill the existing gap in the assessment of SR skills in the Italian context.

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Modulare la relazione tra interocezione ed esperienza fisiologica del tempo attraverso la stimolazione transauricolare del nervo vago (taVNS)

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L'integrazione dei segnali viscerali interocettivi corporei sembra avere un ruolo centrale nell'esperienza fisiologica del tempo. Per approfondire tale relazione, abbiamo impiegato la stimolazione non invasiva del ramo auricolare del nervo vago (taVNS), che sembra avere un effetto modulatorio su diversi processi cognitivi di alto livello. Il sistema vagale, infatti, essenziale nel mantenere l'omeostasi corporea, è ampiamente connesso a varie regioni corticali e subcorticali. Nel nostro studio, soggetti sani sono stati coinvolti in compiti temporali espliciti e impliciti in due diverse sessioni sperimentali che prevedevano l'uso della taVNS (condizioni di stimolazione attiva e sham). In particolare, nel compito temporale predittivo, veniva mostrato un cerchio bianco su sfondo grigio, con una fascia circolare sovraimposta che agiva da fascia occludente. In ogni prova, una palla si muoveva dal centro verso la periferia subendo un cambiamento di velocità sotto la fascia occludente. Ai partecipanti è stato, quindi, chiesto se la palla riemergesse dall'occluder troppo tardi o troppo presto rispetto alle proprie aspettative. L'interocezione è stata, invece, misurata utilizzando l'Heartbeat Counting Task. I risultati preliminari ottenuti attraverso il Wilcoxon-Mann-Whitney test sembrano indicare una migliore performance durante la condizione di stimolazione attiva, in particolare per i compiti temporali predittivi. Inoltre, la correlazione positiva tra abilità temporali e interocezione scompare nella condizione di stimolazione attiva. La taVNS potrebbe quindi avere un'influenza sull'attività cerebrale di alcune aree cruciali per l'esperienza temporale implicita (es. corteccia temporale superiore, corteccia parietale inferiore). Al contrario, tale tecnica, interferendo con la sfera interocettiva, sembra mitigarne il suo legame con i processi temporali.

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Rilevazione di Reazioni Fisiologiche Durante il Recupero di Ricordi Autobiografici Negativi versus Eventi Fabbricati

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Posto che il recupero di ricordi autobiografici emotivi susciti risposte fisiologiche, la ricerca suggerisce che questo fenomeno possa verificarsi anche nel caso di eventi fabbricati. Nel nostro studio, utilizzando dispositivi biometrici non invasivi volti a rilevare il battito cardiaco (HR) e la conduttanza galvanica della pelle (SCL), abbiamo esaminato il recupero di esperienze autobiografiche negative e neutre, sia vere che inventate, attraverso modalità scritta (Esperimento 1) e verbale (Esperimento 2). Sebbene nell'Esperimento 1 non siano emerse differenze statisticamente significative nelle risposte fisiologiche dei partecipanti tra i diversi tipi di recupero, nell'Esperimento 2 abbiamo osservato un aumento delle risposte HR durante il recupero di ricordi negativi rispetto a quelli neutri e fabbricati. Questi risultati confermano l'associazione tra ricordi autobiografici negativi e risposte HR elevate durante il recupero verbale, suggerendo inoltre che la consapevolezza dell'autenticità degli eventi recuperati possa influenzare tali reazioni fisiologiche.

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Solo se insieme o solo se da soli: strategie di coordinazione sociale nei giovani adulti e adolescenti

Authors: Serena Maria Stagnitto[1]; Elvis Kurtisi[1]; Sarah-Jayne Blakemore[2]; Serena Lecce[1]; Gabriele Chierchia[1]

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L'adolescenza è un'età di maggiore esplorazione sociale durante la quale si sviluppano strategie sociali sempre più sofisticate per interagire con i coetanei. Utilizzando un nuovo compito di economia comportamentale adattato per gli adolescenti, abbiamo studiato i miglioramenti nella capacità di coordinarsi "mentalmente" con gli altri, cioè di coordinare le scelte senza comunicare, confrontando condizioni decisionali cooperativi e competitivi e condizioni non-sociali.
189 adolescenti e 192 adulti hanno completato tre giochi economici, con l'obiettivo di massimizzare il guadagno ("monete d'oro"). Ogni gioco prevedeva una serie di scelte tra due opzioni: un'opzione poco remunerativa ma sicura (e.g., 7 monete) e un'opzione potenzialmente più remunerativa ma incerta (15 monete o 0). Nella condizione cooperativa, se si sceglieva l'opzione incerta, il massimo guadagno si otteneva solo se anche un coetaneo anonimo sceglieva la stessa opzione incerta; nella condizione competitiva, il guadagno si otteneva solo se l'altra persona *non* sceglieva la stessa opzione incerta. Nella condizione di controllo, il massimo guadagno si otteneva sulla base di una lotteria casuale.
Modelli misti hanno mostrato che i partecipanti di tutte le età hanno scelto più frequentemente

l'opzione incerta e hanno guadagnato di più nella condizione cooperativa, mentre hanno mostrato una maggiore variabilità nelle scelte nella condizione competitiva (Ds di Cohen > 0.16, tutti i ps < .05). Entrambi questi effetti erano maggiori negli adulti, rispetto agli adolescenti, anche controllando per differenze d'età nella capacità di ragionamento non-verbale. Questi risultati suggeriscono che la capacità di coordinarsi con i coetanei migliora notevolmente tra la prima adolescenza e l'età adulta.

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The "bi-factor vogue"

Author: Roberto Giorgini[1]

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The application of the bi-factor model is frequently implemented to assess the latent structure of psychological tests. However, this "bi-factor vogue"in many cases led to anomalous results, in particular, despite models displaying excellent fit indices had also anomalous loading patterns (Eid et al, 2016). In this work, the latent structure of the Prospective and Retrospective Memory Questionnaire (PRMQ; Smith et al., 2000) was evaluated using several model comparisons to provide instances of bifactor misspecification. The PRMQ was administered through an online survey to a matched sample of 384 participants (50% Female; Age = 37.43± 11.49; Education = 15.57 ± 3.28), all analyses were performed in the statistical programming environment R (R Core Team, 2022).
Three classical models proposed by Crawford et al. (2003) and four alternative bi-factor models meant to address anomalous outcomes when the bi-factor classic model is applied were calculated and compared using the lavaan package (Rosseel, 2012; Eid et al., 2016)
Considering classic fit indices and alternatives in contrast with previous studies, the results seemed to support the unidimensional model as the best-fitting one (df = 104; CFI = .99; TLI= .99; RMSEA= .07; SRMR = .060; ⊠2 = 290.86, p <.001), rather than the alternative bi-factor (PUC= .59; ECV > 0.60; ωh >70; Reise et al., 2013; McDonald, 1999)
The results are in line with the latent variable that PRMQ proposes to evaluate, indeed, the proximal construct that PRMQ's items assess is memory self-efficacy, namely the respondents' beliefs of the frequency of forgetting.

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Characterizing Ejaculatory Patterns Among Males: Insights from Latent Profile Analysis

Authors: Daniele Mollaioli[1]; Andrea Sansone[2]; Elena Colonnello[3]; Tommaso B. Jannini[4]; Erika Limoncin[5]; Giacomo Ciocca[5]; Emmanuele A. Jannini[2]

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Ejaculatory disorders (EjD), while represent a prevalent male sexual issue, are often misdiagnosed due to clinical/psychometric biases. EjD encompasses a broad spectrum of issues, ranging from premature to delayed ejaculation, and even anejaculation. The present study aimed identify specific orgasmic profiles in a non-clinical sample of males by using latent profile analysis (LPA) to classify and characterize adults according to specific sexological outcomes.
A sample of 1364 Italian male adults completed a battery of questionnaires including the International Index of Erectile Function (IIEF), the Premature Ejaculation Diagnostic Tool (PEDT) and the Orgasmometer. LPA was utilized to examine predictors of latent memberships and profile differences on four variables (premature ejaculation, intercourse satisfaction, perceived orgasmic intensity and ejaculatory frequency).
Four latent profiles were identified and labeled "Suborgasmic"(N = 189, 13.9%), "Premature"(N = 105, 7.7%), "Normal"(N = 914, 67.0%) and "Anhedonic"(N = 156, 11.4%). The first profile is characterized by low frequency, low satisfaction, low PEDT and medium intensity; the second profile is characterized by high frequency, medium satisfaction, high PEDT and medium intensity; the third profile is characterized by high frequency, high satisfaction, low PEDT and high intensity; the fourth profile is characterized by high frequency, low satisfaction, low PEDT and low intensity.
Characterizing ejaculatory profiles is an important step toward understanding the many shades of ejaculatory and orgasmic behavior in males. Identifying various ejaculatory profiles has implications for future research, including the development of more precise diagnostic tools and interventions to address EjD in clinical context.

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Close to me in space or time? Climate change awareness and worry predicts pro-environmental behavior through the mediation of temporal, but not spatial, psychological distance

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In line with the Construal Level Theory, in recent years psychological distance (PD) from climate change have been appointed as one of the most relevant barriers to risk perception of climate change and motivation toward sustainable behaviors, thus suggesting that changing PD may play a critical role in determining individuals engagement in pro-environmental actions. Despite growing

research, there is still conflicting opinion regarding how PD may exert its effects, since mixed results have been reported. In this study we investigated two main ideas: at first, the hypothesis that the complex relationship between PD and pro-environmental behaviors is modulated by both cognitive and affective information processing and that lacking one component may lead to reduced influence of PD on pro-environmental behaviors; secondly, different dimensions of PD may exert different influence on pro-environmental behaviors. To this purpose, participants completed a survey investigating their perceived PD from climate change on temporal and spatial levels, awareness of climate change (cognitive factor), worry about climate change (affective factor) and engagement with sustainable behaviors. Results highlighted that awareness of climate change (cognitive factor) do not directly predict pro-environmental behavior, but through the serial indirect effects of temporal perceived psychological distance and climate change worry (affective factor). This relationship is not significant when considering spatial perceived distance. These results may contribute to the literature investigating the effect of PD on sustainable behavior, by also informing policy making. Moreover, our results may contribute to the debate on the relationship between mental construals of temporal and spatial distance.

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Quanta informazione serve al cervello per riconoscere un volto? Uno studio ERPs con stimoli dinamici

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Co-authors: Giulia Prete [1]; Gianluca Malatesta [2]; Chiara Lucafo' [1]; Daniele Marzoli [1]; Luca Tommasi [1]

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La N170 è un indice elettrofisiologico affidabile che indica una risposta cerebrale specificamente correlata alla codifica del volto. Sebbene numerosi studi si siano concentrati sulla registrazione dell' attività corticale associata alla visione di volti, la maggior parte di questi ha utilizzato immagini che compaiono improvvisamente in corrispondenza di un punto di fissazione e che tengono poco conto di contesti ecologici, nei quali un volto può comparire in maniera graduale.
Obiettivo di questo studio è analizzare il decorso temporale della N170 durante la percezione di un volto che si svela gradualmente all'osservatore. È stato effettuato un esperimento EEG, estraendo i potenziali evento correlati (ERPs) evocati da volti, in un gruppo di 20 partecipanti. In una condizione dinamica, un quadrato si spostava orizzontalmente sullo schermo, svelando gradualmente (in 1 sec) la completa identità di un volto presente sotto di esso. In una condizione statica (di controllo) veniva presentato un quadrato immobile sostituito improvvisamente da un volto (1 sec).
Oltre a confermare la N170 nella condizione statica, i risultati mostrano un picco negativo di ampiezza ridotta a circa 220 ms (circa 20% del volto visibile), insieme ad un secondo picco negativo a circa 320 ms (circa 30% del volto visibile), di ampiezza maggiore rispetto al primo picco. Questi risultati suggeriscono che nel processo cerebrale di identificazione di un volto che compare in maniera graduale potrebbe avvenire un primo riconoscimento parziale basato sul 20% dell'informazione facciale, seguito da un riconoscimento completo dello stimolo quando il 30% del volto è visibile.

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Test length doesn't matter: An intelligent procedure for item selection in Item Response Theory

Authors: Ottavia M. Epifania[1]; Pasquale Anselmi[2]; Egidio Robusto[2]

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Item Response Theory (IRT) provides the ideal framework for generating short test forms (STFs) from item banks or from full-length tests thanks to the possibility of obtaining detailed information on the precision with which each item measures the latent trait. As such, the most precise items can be selected for inclusion in the STF and the number of items can be minimized while the measurement precision can be maximized. The usual procedure for developing STFs is based on the visual inspection of item and test information functions (IIFs and TIFs) to find the items that best contribute to make up a STF with the desired characteristics. This contribution presents a new procedure that aims at automating this process by defining a target TIF and finding the items from the item bank that best recover it. The algorithm directly compares the distance between the target TIF and a temporary TIF obtained by adding an item at a time. The items are chosen according to their closeness to the location on the latent trait where the distance between the target and the temporary TIFs is maximized. The algorithm stops when the addition of a new item does not reduce the distance between target and temporary TIFs. The procedure can be applied both when the length of the STF is defined a priori and when the aim is to find the optimal number of items. The results of the application of this procedure are presented.

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"Perceptual features - not emotion categorization - affect the detection of emotional faces: insights from a visual search study"

Author: Erika Bucci[1]

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Humans excel in the interpretation of facial cues, which allows them to anticipate others and respond accordingly. Nonetheless, it remains unclear whether an advantage in the detection of those cues arises from the categorization of facial expressions, such as happy or angry, or from the magnitude of the deformation of the face, regardless of the emotion category.
Here, we sought to clarify this aspect by asking 52 participants to perform a visual search for emotional faces among neutral expressions. Pictures of happy and angry faces were selected from ADFES'dynamic facial expressions either at their respective -yet unequalized- maximum intensity (unmatched-intensity condition) or at an intermediate -yet equalized- intensity (matched-intensity condition) according to 11 independent raters.
We examined the effect of emotion (i.e., happy vs angry; generalized linear mixed effect models) on participants'accuracy and reaction times in both conditions. Unsurprisingly (Juth et al., 2005), happy faces are detected faster and more accurately than angry ones ($p < .001$) in the unmatched-intensity condition. However, the effect is reversed when the intensity of facial expressions is matched, with an advantage for angry faces in terms of accuracy and reaction times ($p < .001$).
Our results question the existence of a happy-face advantage in visual search tasks. Instead, a decisive role is played by the magnitude of the deformation of the face and its relationship with perceptual features. Further studies could test whether the apparent advantage of specific facial expressions reported in other tasks is explained by low-level features rather than emotional categories.

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Creativity in the Space-Time Continuum: The Importance of Context

Authors: Angela Faiella[1]; Giovanni Emanuele Corazza[1]; Honghong Bai[2]; Sergio Agnoli[3]

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Although the context-embedded nature of creativity has been confirmed by newest theories, laboratory studies cannot easily address it due to a lack of tools for measuring it. Based on the Space-Time continuum theoretical framework (Corazza and Lubart 2021), we modeled the context on two dimensions: the conceptual space in which an action or idea is conceived and the time interval available for idea generation. This exploratory study, aimed to create and examine the effectiveness of a new research paradigm for manipulating the conceptual space. 129 participants (Mage = 29.04±10.38 years) were tested with two main tasks. First, participants were asked to produce concepts associated with a given cues (Free Association Task, FAT: "Write all the concepts you can think of about a [cue]"), contextualized in general, science, and art domains. By manipulating the specificity of the cue, we created four between-subject conditions with the conceptual space hypothetically ranging from very loose (e.g., "science") to very tight (e.g., "scientific experiment in molecular biology"). Next, all participants performed the Alternative Uses Task (AUT), a classic divergent thinking task for measuring creative performance. ANOVA results (3 domains × 4 conditions) on FAT showed the effect of the condition on the number of concepts given, and post-hoc comparisons indicated that participants under the very tight condition generated less concepts than others. On the contrary, these participants generated more ideas during the AUT. These results showed the effectiveness of the new paradigm in manipulating participants'conceptual space, which likely also influenced their subsequent AUT performance.

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Navigating the Memory Maze: Unveiling Visuo-spatial Working Memory with VR-based RAM in Healthy Adults

Author: Noemi Passarello[1]

Co-authors: Tommaso Palombi [2]; Andrea Chirico [2]; Fabio Alivernini [3]; Fabio Lucidi [2]; Laura Mandolesi [1]

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This study investigates visuo-spatial working memory in healthy adults (n = 61, mean age = 25 years, SD = 3.45) using virtual reality (VR) and traditional methods.
We adapted the Radial Arm Maze task (RAM) in VR to assess working memory dynamically. Participants navigated a maze to find hidden objects. Concurrently, we administered classical measures (Corsi and Digit Span tests) and analysed individual differences in RAM performance related to sports activity, gender, and age.
Cowan's K was employed to evaluate RAM performance, and regression modelling examined its predictive power for working memory beyond classical tests. Results revealed RAM's unique ability to capture visuo-spatial working memory nuances, significantly predicting broader working memory abilities. Individual differences analysis highlighted the impact of sports activity, gender, and age on RAM performance.
This study underscores VR's utility in cognitive research and offers insights into visuo-spatial working memory complexity. By integrating innovative methodologies and analysing individual differences, our findings advance cognitive assessment strategies in healthy adults.

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The influence of sensory modality on contextual processing: evidence from temporal and spatial perception.

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When tackling sensory ambiguity, our brains employ diverse strategies to navigate and resolve challenges, such as using contextual information and prior experiences, which are pivotal in shaping our perceptions. Central tendency is a phenomenon where perception gravitates towards the average stimuli encountered in prior experiences, especially within the same sensory modality. An intriguing question arises regarding potentially more reliable prior experiences from a different sensory modality. We investigated this through an estimation task, exploring if perception in one modality can benefit from a more reliable cross-modal prior. Participants estimated temporal or spatial aspects of randomly presented auditory or visual stimuli, each with distinct averages. Our findings from these tasks revealed a bias toward the more reliable modality, emphasizing the role of modality-specific contextual information over central-tendency-based cues.
Moreover, we conducted analyses using various prior models to identify the most fitting model for our experimental data. This analysis underscored the importance of relying on priors from the most reliable modality specific to the task, emphasizing the brain's ability to discern and leverage the most relevant contextual information available from any sensory modality to resolve perceptual ambiguities effectively. In conclusion, our study sheds light on the dynamic interplay between sensory modalities, contextual information, and prior experiences in shaping human perception. This deeper understanding contributes to our broader knowledge of perceptual mechanisms and their implications for real-world tasks and challenges.

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The developmental trajectories of adaptive cognitive control in typically developing children

Author: Giulia Stefanelli[1]

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Adaptive cognitive control (CC), a flexible interplay between reactive and proactive CC modalities, changes during development. Previous studies employed separate tasks to investigate the effect of contextual predictability on adapting distinct mechanisms of CC, including shifting, response inhibition or control interference. However, less is known about the developmental trajectories of adaptive CC in more demanding experimental environments requiring to both implement visuo-spatial attentional control and motor response inhibition. The present study delves into the developmental trajectories of adaptive CC in 126 typically developing children and pre-adolescents (4-14 years olds) based on contexts' predictability manipulation. We used the Addy game, a cued-goNogo computerised task, in which a List-Wide Proportion Congruency manipulation was used to create Predictive (78% validity) and Non-predictive (50% validity) blocks. These were presented in fixed order across participants who were unaware about the manipulation. To assess how inhibitory control adapts to different predictive contexts 17% of the trials within each block were NoGo. Overall, we found that adaptive CC interacted with age in terms of attentional control. Indeed, a reaction time (RT) speeding-up for invalid trials occurred at all ages. However, in preschool-aged children this implied slower RTs at valid trials, while only pre-adolescents efficiently adjusted RTs in both conditions. However, only preschoolers showed lower noGo accuracy in predictive blocks, suggesting

a reduced contextual-based response inhibition. In conclusion, for the first time we show that CC adaptation to contextual-based, implicit predictability follows distinct developmental trajectories for visuo-spatial attentional control and response inhibition.

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Mini-talks / 5

La percezione del rischio in ambito medico: quando formazione e quotidianità lavorativa fanno la differenza

Authors: Alessandra Cecilia Jacomuzzi[1]; Paola Iannello[2]; Brigitta Pia Alioto[1]

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Le mutazioni genetiche BRCA (BReast Cancer susceptibility gene) sono direttamente collegate con un aumento del rischio di sviluppare tumori al seno e all'ovaio. Attualmente il test per verificare un' eventuale mutazione viene proposto, nell'ambito del SSN, solo a pazienti che presentano specifici fattori di rischio.
Il presente studio si pone l'obiettivo di indagare la percezione, da parte del medico, del rischio che il paziente sia portatore della mutazione e la decisione di prescrivere il test. A 100 soggetti (55% maschi; età media= 52 anni) con differenti specializzazioni mediche è stato somministrato un questionario online costituito da: (i) tre scenari in cui la storia del paziente determinava un differente rischio per mutazione BRCA; ai soggetti veniva chiesto di valutare la probabilità della mutazione BRCA e se consigliavano di sottoporsi al test; (ii) scale self-report relative a tratti di personalità. I risultati evidenziano una differenza tra medici di base vs. altre specializzazioni nella percezione del rischio che il paziente sia portatore di BRCA. Sono state trovate differenze simili anche nella possibilità di suggerire di sottoporsi al test.
I risultati ottenuti mettono in luce la necessità di affrontare il problema del rischio del paziente in maniera più dettagliata e approfondita nell'ambito della medical education. Suggeriscono, inoltre, che il contesto lavorativo quotidiano possa essere determinante nella formazione a lungo termine dei medici.

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Misurazione dell'affidabilità test-retest dell'effetto SNARC in compiti di giudizio di parità e confronto di grandezza

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Le teorie predominanti della rappresentazione cognitiva dei numeri descrivono l'effetto SNARC come risultato di una rappresentazione spaziale stabile dei numeri lungo un asse orizzontale. Nello specifico, i numeri piccoli e grandi sarebbero stabilmente associati con la parte sinistra e destra dello spazio, rispettivamente. Proprio in virtù della stabilità di tale rappresentazione, sembra lecito ipotizzare che l'effetto SNARC possa essere un fenomeno altamente replicabile, con fluttuazioni temporali trascurabili, almeno nel breve periodo. Il presente studio si propone di mettere alla prova la stabilità dell'effetto, fornendo una stima accurata e generalizzabile della sua affidabilità test-retest. Due diversi gruppi di partecipanti (N ≈ 150 ciascuno) sono stati coinvolti in un compito di confronto di grandezza o in un compito di giudizio di parità in due sessioni distinte, separate da almeno due settimane. L'affidabilità test-retest dell'effetto SNARC è risultata particolarmente bassa nel compito di giudizio di parità, mentre è risultata sensibilmente più alta nel compito di confronto di grandezza. Questo suggerisce l'esistenza di differenze intrinseche, ma in gran parte inesplorate, tra i due compiti tradizionalmente impiegati per la misurazione dell'effetto SNARC. Più in generale, questi risultati costituiscono una sfida per le teorie che vedono lo SNARC come il prodotto di una associazione tra numeri e spazio stabile e ben radicata. La scarsa affidabilità test-retest dell'effetto SNARC invita inoltre ad interpretare con cautela gli studi sulle differenze individuali che si basano sull'analisi della correlazione tra effetto SNARC e altri costrutti indipendenti, come le abilità matematiche.

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Da spazi vettoriali a liste DRM: False Memory Generator, un software per la generazione automatica di liste di stimoli che inducono false memorie.

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Il paradigma Deese-Roediger-McDermott (DRM) è uno degli strumenti più utilizzati per indagare i fattori che causano le false memorie. Tipicamente, in questo compito, i partecipanti memorizzano prima una lista di parole e poi devono indicare se le parole presentate in una nuova lista erano presenti nella lista memorizzata. Utilizzando questo paradigma, gli studi precedenti hanno dimostrato il ruolo cruciale della somiglianza semantica nella generazione di false memorie, mostrando che parole nuove semanticamente relate a quelle apprese tendono ad essere erroneamente riconosciute come parte della lista memorizzata. Sebbene il DRM abbia molti punti di forza, presenta una significativa limitazione che pone problemi sia pratici che teorici: richiede una lunga e complessa fase manuale preliminare per costruire le liste a partire da norme di associazione di parole. Per superare questo limite, abbiamo sviluppato False Memory Generator (FMG), un software per generare automaticamente

liste DRM, che sfrutta le relazioni di similarità tra gli elementi di uno spazio vettoriale. Qui presentiamo FMG e dimostriamo la validità delle liste generate a partire da spazi semantici distribuzionali nel replicare i noti effetti semantici nella produzione di false memorie. Infine, mostriamo come FMG offra un'ampia gamma di applicazioni, permettendo di studiare i fattori che inducono false memorie in contesti ben oltre le possibilità attuali. FMG può essere infatti impiegato per testare come qualsiasi proprietà codificata in uno spazio vettoriale (ad esempio caratteristiche associate alle parole, ai loro referenti o anche ad altri stimoli, come immagini, suoni, ecc.) influisca sulla produzione di false memorie.

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Is that a cluster? A practical guide on how to avoid Type I and Type II error

Author: Ambra Perugini[1]

Co-authors: Enrico Toffalini [1]; Tommaso Feraco [1]; Filippo Gambarota [1]; Massimiliano Pastore [1]; Gianmarco Altoè [1]

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Clustering, or cluster analysis, is a family of unsupervised machine learning methods that allow researchers to group sets of observations into smaller subsets (clusters) based on some sort of similarity. As cluster analysis is becoming popular in psychological and social sciences, it comes the need to point out some risks in performing cluster analysis. Even though these methods are mostly exploratory, they are more often used to make inference, therefore, inferential risks should be taken into consideration. Common risks include not only failing to detect existing clusters due to a lack of power but also revealing multiple clusters that do not exist in the population (Type I error).
Through data simulation we will go through a couple of examples highlight- ing these risks. And ultimately, we will introduce a tool developed to estimate Type I error and power which can be used a priori to determine whether the research design is respecting the assumptions. When assumptions in the data structure are not respected (skewness, kurtosis, correlation between indicators), there is a high risk of detecting clusters that are not there. Specifically, in psy- chological research those assumptions are rarely respected, and a wise choice of the technique used to perform cluster analysis is even more important, as different existing methods have different underlying assumptions (i.e. K-means, Gaussian Mixture Models).

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Item Reverse or Non-Reverse: This Is The Dilemma. Item Response Theory Evidence from the Balanced Emotional Empathy

Scale (BEES)

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The incorporation of reverse-worded items in the development of psychometric instruments has been a longstanding practice. Indeed, reverse-worded items are routinely utilized to mitigate response style biases, including acquiescence bias, extreme response bias, and unthinking responding. The present study aimed to contribute novel insights regarding the wording effect. Specifically, we employed the Item Response Theory (IRT) approach to investigate this phenomenon, focusing on the Balanced Emotional Empathy Scale (BEES). A total of 312 participants (Mage = 21.35, sd = 8.25) completed the BEES. To explore the characteristics of the BEES items, we separately applied the IRT Graded Response Model to both non-reverse and reverse items. Additionally, we assessed age-related invariance. Our findings supported the unidimensionality of both item types when analyzed independently. Notably, the non-reverse items exhibited higher discrimination and information compared to the reverse items, while maintaining internal coherence. The BEES demonstrated satisfactory precision at the lower and middle-lower levels of the trait (Cronbach's $\alpha = 0.85$). However, age-related invariance was only evident within the medium to low trait levels. In conclusion, our findings caution against uncritical adoption of reverse-worded items as a standard practice, given their inherent conceptual challenges. Although we do not outright exclude the use of reverse items, we emphasize the importance of employing cost-effective tools and vigilantly contemplating any methodological artifacts that could impact research outcomes. Our empirical findings support a new parsimonious version of the BEES, comprising solely fifteen positively worded items.

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The breadth of retrospective spatial attention is modulated by the vividness of the trace in visual short-term memory.

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The duration and vividness of the memory trace in visual short-term memory stages remains a debated issue in consciousness studies. The present study sought to investigate which is the fate of a trace stored in visual short-term memory when time passes and how retrospective spatial attention interacts with this process. Twenty subjects performed a change detection task in which the focus of attention during encoding was manipulated using a spatial pre-cue (i.e., left or right arrow). After the presentation of the memory array, the appearance of the retro-cue could either direct internal attention in accordance with the side of the screen indicated by the pre-cue (i.e., valid) or to the opposite side (i.e., invalid). In both valid and invalid conditions, the retro-cue could point toward a probe item that was placed at the extreme left or right (i.e., peripheral) or at the mid-left or mid-right (i.e., central) part of the memory array. Results showed differences in accuracy at 150 ms retro-cue delay

for central and peripheral items in both valid and invalid conditions, while at 600 ms and 1200 ms retro-cue delay differences in central and peripheral items were only found for the valid condition. These results may give insights on the mechanism of retrospective spatial attention, suggesting that when time passes, the memory trace in short-term memory start to fade out, the breadth of internal attention progressively narrows, and it is no longer possible to retrieve items that are outside the focus of attention.

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The Social Side of The STEARC Effect: Spatial Representation of Face Age in Explicit and Implicit Tasks

Author: Stefano Pileggi[1]

Co-authors: Michele Vicovaro [2]; Mauro Murgia [3]; Mario Dalmaso [4]

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Time can be conceptualized in spatial dimensions, as evidenced by the STEARC effect (Bonato et al., 2012). In recent work by Dalmaso et al. (2023), Western participants categorized the age of a central target male face as either younger or older than a reference face. The findings revealed that the perceived age was mapped from left to right. In the present study, we further examined whether a spatial mapping of face age implicitly emerges when an irrelevant dimension (male vs. female) is judged. Experiment 1 is a conceptual replication of the original study, in which participants were asked to explicitly categorize face age (younger vs. older), using a new set of stimuli (male and female faces). The results further confirmed the spatial mapping of face age when using an explicit task, with younger faces associated to the left and older faces to the right. In Experiment 2, a new set of participants categorized the gender of faces (male vs. female). The results confirmed the same pattern as previous experiments, also when face age was an implicit dimension. Similar to other studies on spatial associations for magnitudes, in the implicit task the effect appears smaller (Macnamara et al. 2018). Overall, these results confirm that face age can be mapped from left to right, using both explicit and implicit tasks. Further results will be presented on the distance effect, as well as on the role of other variables (i.e. gender of the stimuli/participants and their congruency).

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An electroencephalographic investigation of the impact of eye movements in a memory probe task

Author: Alberto Petrin[1]

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Most neuroscientists often neglect that the soundest motivation for excluding EEG epochs contaminated by saccades from analysis does not entail only signal quality but also signal meaning. Saccades can in fact be an overt manifestation of spurious cognitive processing that may distort the interpretation of event-related potentials (ERP). We evaluated this potential risk by comparing two artifact removal methods (a standard epoch rejection method and independent components analysis, or ICA) on a lateralized ERP component indexing visual working memory load, i.e., the sustained posterior contralateral negativity (SPCN).
Subjects had to memorize an array composed of a variable number of laterally displayed colored squares. In half of the experiment, subjects had to keep their gaze at fixation, whereas they had to saccade towards the memoranda in the other half. The memory array was displayed for 100 ms or 500 ms so as to check for effects of the post-saccade physical availability of the memoranda on SPCN amplitude and latency.
The results were clear-cut in showing that, relative to epoch rejection, ICA correction preserved both quality and meaning of SPCN amplitude. The post-saccade physical availability of the memoranda affected the latency of the SPCN, with shorter SPCN offset latency when the memoranda were exposed for 500 ms than for 100 ms, probably due to a post-saccade retinotopical remapping of the memoranda.
The results are discussed with reference to the possible modifications of instructions and designs that can be used to test visual working memory load in analogous probe designs.

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Rilevazione della sincronizzazione fisiologica nel servizio di counseling universitario

Author: Alessandro Piro[1]

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Nelle relazioni di aiuto, i processi di regolazione emotiva rappresentano l'obiettivo terapeutico, influenzato dalla modalità di sincronizzazione tra terapeuta e paziente. Numerosi studi hanno esplorato i processi di sincronizzazione, integrando misure esplicite con indicatori fisiologici come battito cardiaco (HR) e conduttanza cutanea (SC). Il presente studio coinvolge studenti che accedono

al Servizio di Counseling Psicologico dell'Università degli Studi di Bari e gli operatori del Servizio. L'obiettivo è quello di valutare l'efficacia degli interventi messi in atto e i relativi processi di sincronizzazione terapeuta-studente, integrando misure esplicite (e.g., regolazione emotiva, alleanza terapeutica e benessere psicologico generale) e misure fisiologiche (i.e., HR e SCL) rilevate tramite dispositivi non-invasivi (Empatica E4 wristband). Prima dell'avvio della sessione, studenti e terapeuti, compilano una batteria di test sulle misure sopracitate. Inoltre, tramite l'uso di Empatica E4 wristband, vengono raccolti parametri fisiologici durante la visione di un video neutro, che verranno poi messi a confronto con i parametri registrati nel corso del colloquio. Terminato il primo colloquio, entrambi compilano un ulteriore questionario sulla regolazione emotiva e sull'alleanza terapeutica. Tale procedura è ripetuta anche durante il terzo ed il quinto incontro, al fine di investigare l'andamento della relazione studente-terapeuta. In linea con la letteratura, i risultati mostrano un trend, nelle diadi, caratterizzato da una maggiore sincronizzazione nel corso degli incontri, rilevabile dalle misure esplicite e fisiologiche. Tali risultati dimostrano come l'impatto del percorso di counseling universitario sia efficace in termini di alleanza terapeutica, riducendo sintomi legati al distress, incrementando di contro una regolazione emotiva e promozione del benessere.

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The influence of psychological factors on functional status in fibromyalgia

Author: Denise Mellace[1]

Co-authors: Edoardo Aiello [2]; Angelica De Sandi [3]; Angelica Marfoli [1]; Sofia Allegri [3]; Benedetta Ticozzelli [3]; Maurizio Vergari [3]; Fabiana Ruggiero [3]; Francesca Mameli [3]; Eleonora Zirone [3]; Barbara Poletti [1]; Daniela Chieffo [4]; Gabriella Pravettoni [1]; Alberto Priori [1]; Sergio Barbieri [3]; Roberta Ferrucci [1]

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Background
Fibromyalgia is characterized by chronic, widespread pain that is often accompanied by fatigue, sleep disturbances, and cognitive and mood impairment. Pain is a complex and multidimensional experience that significantly impacts personal, social, and professional functioning. Psychological factors known to be associated with chronic pain include catastrophizing and self-efficacy in managing the painful condition.
This study examines the influence of chronic pain and related psychological factors on functional outcomes in fibromyalgia patients.
Methods
91 Italian patients with fibromyalgia were examined using an online questionnaire including instruments such as the Numerical Rating Scale (NRS), the Brief Pain Inventory (BPI), the Pain Self-Efficacy Questionnaire (PSEQ), the Pain Catastrophizing Scale (PCS), and the 12-item Short Form Survey (SF-12) questionnaire.
Multiple regression models were conducted, using the Interference subscale of the BPI and the physical and mental components of the SF-12 as outcomes, and the NRS, PCS and PSEQ scales as predictors.
Results
In our models, both PCS and PSEQ were significant predictors of BPI-Interference (PCS: β=.29;

p=.001; PSEQ: β=-.36; p<.001); NRS and PSEQ significantly predicted SF-12-Physical score (NRS: β=-.32; p=<.001; PSEQ: β=.50; p<.001); PCS was found to be the only significant predictor of SF-12-Mental scores (β=-0.53; p<.001).
Conclusions
Psychological dimensions such as catastrophic thinking and self-efficacy have been shown to play a critical role in determining the daily functioning and health status of fibromyalgia patients, independent of the impact of pain intensity.

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Cognitive and reading profiles of healthy older adults. A preliminary investigation combining neuropsychological assessment with multimodal digital recordings

Author: Vito Pirrelli[1]

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Reading plays an important role in functional maintenance, preserving significantly cognitive functions in ageing individuals and allowing people to keep up to date, ensure continuous training for a complex task, and experience emotions.
To investigate the relationship between normal ageing and reading skills, we tested a novel experimental protocol that combines measures of visual crowding (MEC: Facchin et al. 2019; and BReViS: Facchin et al 2023), measures of sustained and selective attention, working memory, and processing speed provided by the Symbol Digit Modalities Test (SDMT: Nocentini et al. 2006), with the online assessment of reading fluency by means of "finger-tracking data"(ReadLet: Ferro et al. 2018, Crepaldi et al. 2020). ReadLet evidence consists in the recorded (oral) reading of a connected text displayed on a tablet touchscreen, time-aligned with the recording of the movements of the reader's index finger concurrently underlining the same text (known as "finger-point reading"). We applied the protocol to a cohort of neurologically healthy older adults aged 65-75 (38 women, mean age: 68.6, 23 men, mean age: 69.3), with an above-average schooling background (mostly high school graduates), hosted in long-term care facilities in the province of Milan (Pegoraro et al. 2023).
We propose a detailed analysis of the observed correlations between reading performance on ReadLet and cognitive performance on MEC, BReVIS and SDMT. Convergent and complementary evidence suggests that many factors can contribute to reading decline, with specific aspects of cognitive decline differentially affecting the processes involved in a complex, multi-sensory cognitive task such as reading.

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Upper Limb Embodiment and the influence of Haptic, Thermal and Nociceptive Feedback –A Systematic Review

Author: Alessandro Ingenito[1]

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Body representation is quite plastic and may even allow to incorporate external effectors, such as tools, prosthesis, or virtual avatars into our body representation. The process of representing these elements as parts of us is known as 'embodiment'. Various factors can improve the possibility of embodying an effector to the upper limb: among these, tactile feedback is recently acquiring relevance. Nonetheless, the impact of tactile feedback in its different forms on embodiment of external effectors to the upper limb is still ill-defined. To have a clearer understanding, we systematically reviewed how nociceptive, thermal, or haptic (vibrotactile, pressured and force) feedback influences the embodiment of upper limb effectors in controlled studies. Sixty-eight studies acquired from the PubMed®, Scopus®, and ACM Digital Library® databases were included to perform this qualitative evaluation. Overall, although a disparity in the number of studies encountered across the various feedback forms, haptic and thermal feedback enhance the chances of incorporating an external effector, whereas nociceptive feedback is the least impactful modality on the sense of incorporation and more studies are necessary to assess its role. This systematic review sheds light on the importance of delivering different forms of tactile feedback to achieve the highest form of embodiment, which can be of extreme usefulness in the field of prosthesis and virtual reality.

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Riabilitazione a lungo termine della memoria episodica in pazienti post-ictus: un trial con adattamento prismatico e serious games

Authors: Massimiliano Oliveri[1]; Patrizia Turriziani[2]

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I deficit di memoria episodica hanno una elevata prevalenza nei pazienti con stroke.
Riportiamo i risultati di un trial che ha indagato gli effetti sulla memoria episodica di un dispositivo medico che combina adattamento prismatico con training cognitivo mediante serious games (Mindlenses Professional) in pazienti con stroke.
Il trial ha reclutato 60 pazienti con stroke focale unilaterale: trenta pazienti inclusi nel gruppo sperimentale e 30 pazienti nel gruppo di controllo, trattati con riabilitazione convenzionale. Il trattamento sperimentale consisteva in adattamento prismatico, con deviazione ipsilaterale all'emisfero leso, seguito da un training cognitivo con 8 serious games che stimolano processi di inibizione, selection e set shifting. Il test delle 15 parole di Rey e il test della figura complessa di Rey (rievocazione immediata e differita) sono stati somministrati prima dell'inizio del trial (T0), al termine di 10 sessioni di trattamento (T1), dopo 3 mesi (T2) e dopo 6 mesi (T3).
L'ANOVA sul numero di item rievocati in rievocazione differita mostra una interazione significativa dei fattori Gruppo (sperimentale vs. controllo) x Tempo (T0, T1, T2, T3) sia per il test verbale ($F = 3.3$; $p = 0.02$; partial eta square: 0.12) che per quello visivo ($F = 4.1$; $p = 0.01$; partial eta square: 0.17).
In entrambi i casi, il numero di item rievocati dopo la riabilitazione aumenta significativamente nel gruppo sperimentale ma non in quello di controllo, con effetti significativi anche al follow up di 6 mesi.
I risultati sono discussi in termini di neuromodulazione eccitatoria dei circuiti fronto-parietali dell'emisfero leso.

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Relationship between creativity and psychiatric disorders

Author: Angelica De Sandi[1]

Co-authors: Giordano D'Urso [2]; Edoardo Nicolò Aiello [3]; Mariachiara Calloni [4]; Denise Mellace [4]; Angelica Marfoli [4]; Gaia Del Prete-Ferrucci [5]; Fabiana Ruggiero [1]; Francesca Mameli [1]; Eleonora Zirone [1]; Barbara Poletti [3]; Sergio Barbieri [6]; Alberto Priori [7]; Roberta Ferrucci [4]

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Introduction. Creativity is the capacity to conceive original ideas, solutions, and new concepts, this includes divergent thinking, defined as the ability to think outside of established patterns1. Previous studies had examined the connection between creativity and schizophrenia, but the results were heterogeneous and contradictory2.
In this study, we aim to explore the association between creativity and psychiatric disorders using the Divergent Thinking Test (DTT).
Methods. 20 patients with schizophrenia (SCZ), 28 with psychiatric disorders other than schizophrenia (PDotS) and 38 healthy subjects (HS) performed the DTT, which includes five factor scores: fluidity (FL), flexibility (FS), originality (O), elaboration (E), title (T). Linear models were used for

comparisons between groups.
Results. The results showed that SCZ patients performed significantly worse on DTT-total when compared HS [(mean±SE) SCZ vs HS: 72.37±4.83 vs 88.47±3.40, p=.027], with no other comparisons yielding significance (PDotS vs. HS: p=.273; SCZ vs. PDotS: p=.775).
Conclusions. Regarding the type of diagnosis, performance on the DTT task is significantly lower in schizophrenic patients than in patients with another psychiatric disorder, suggesting the existence of a negative association between creativity and schizophrenia.

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The role of the cerebellum in gaze perception and social attention: a Transcranial Magnetic Stimulation study

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Eye gaze is a salient social cue we easily process and attend to when encountering a face. Current evidence shows that the neural bases of eye gaze perception and attention rely on the activity of the face processing network and the social brain (e.g., Superior Temporal Sulcus) and preliminary data suggest that also the cerebellum takes part in this circuit. In the present study, we aim to investigate the role of the cerebellum in gaze perception and social attention using Transcranial Magnetic Stimulation (TMS). Participants were presented with faces with averted gaze and asked to perform a gaze discrimination task - assessing the direction of the eye gaze - and a gaze cueing task - localizing the position of an object congruent or incongruent with the eye gaze - while TMS was delivered over the cerebellum and control areas. Preliminary results suggest a possible involvement of the cerebellum and provide additional evidence of its fundamental role in the social brain.

Keywords: gaze perception; attention; transcranial magnetic stimulation; social cognition

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L'emotion detection nel settore bancario: uno studio pilota

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L'Affective Computing (AC) è una branca dell'Intelligenza Artificiale (IA) che si occupa di studiare e sviluppare sistemi e dispositivi in grado di riconoscere, interpretare, elaborare e simulare le emozioni umane, con l'aiuto di interfacce informatiche. Negli ultimi decenni, l'AC è stata adoperata in diversi ambiti applicativi, incluso il contesto bancario, per fornire migliori servizi all'utente e valutarne la soddisfazione. In tale ambito le applicazioni dell'AC presuppongono un allenamento del sistema nel discriminare le diverse emozioni in risposta alle attività di pertinenza. Per rispondere a questa necessità, nel presente studio pilota, sono stati costruiti tre scenari emotivi (felicità, paura, e rabbia) rappresentanti tre scene tipiche di fronte ad un ATM, in modo da verificare se fossero in grado di indurre nell'utente le rispettive emozioni e con quale intensità. Sessanta partecipanti hanno preso parte allo studio (50% donne; Metà = 26.6, SD = 6.03). I risultati indicano che gli scenari felicità e rabbia hanno suscitato le corrispondenti emozioni con una intensità medio-alta ($p < .001$), mentre lo scenario di paura ha registrato un livello basso di attivazione emotiva corrispondente. Questi risultati si rivelano promettenti per l'implementazione di programmi di emotion recognition nell' interazione cliente-banca attraverso device dedicati.

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Practical Driving Test Anxiety: A Study to Assess the Impact of a Specifically Designed Program

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This study aimed to evaluate the effectiveness of a program specifically designed to address anxiety related to the practical driving test. A total of seventy candidates from a driving school course were selected from a larger group of 250 students based on their high test anxiety scores. These participants were randomly divided into two groups: the experimental group, which received training from a traffic psychologist, and the control group, which received additional driving lessons and a session to discuss test-related concerns with a guide instructor. The State Anxiety Scale (STAI) was used to measure anxiety levels three times: before the training/alternative treatment, immediately after, and before the driving test. The results showed that the experimental group exhibited significantly lower anxiety levels after the training and before the driving test when compared to the control group. The study's results will provide insights into the program's efficacy in reducing anxiety related to the practical driving test.

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Inhibition changes across the lifespan: experimental evidence from the Stroop task

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Individuals constantly exert inhibitory control over their thoughts and behaviors to plan actions that compete with habits and impulses. Cognitive inhibition enhances the selection of task-relevant stimuli and is closely related to neural changes that occur across the lifespan.
Since few studies have focused on the entire lifespan, this study aimed to assess cognitive inhibition abilities in a sample of 425 healthy participants (age range: 7-88 years) using the Stroop task.
The participants were grouped according to age into children, adolescents, young adults, adults, middle-aged adults, and older adults. A series of ANOVAs considered Group as the independent variable and Performance indices as the dependent variables.
The children did not show an interference effect (stroop effect), likely due to the lack of an automated reading process as a consequence of ongoing brain maturation. Adolescents and young adults performed significantly faster than older adults did. The results indicate that response speed reaches its peak during adolescence and young adulthood and then slightly decreases until older age. Nevertheless, compared with the other groups, only older adults showed significant differences in the Stroop effect, suggesting that inhibitory abilities remain relatively consistent throughout adulthood but rapidly worsen in recent years due to the physiological decline in cognitive and brain functioning associated with aging.

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The Social Media Fatigue Scale (BSMFS): A Brief Version

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Social media, an integral component of daily life, can affect psychological well-being and lead to a state known as social media fatigue (SMF). This study investigates the structure and psychometric properties of the Social Media Fatigue Scale (SMFS) and examines its relationships with related psychological constructs. Our sample comprised 329 individuals (Mage = 26, SD = 8.46; 26.1% males) who completed an online survey assessing SMF, trait anxiety, fear of missing out (FoMO), boredom proneness (BP), and problematic social media use. The latent structure of the SMFS was initially examined using Exploratory Factor Analysis (EFA), subsequently corroborated through Confirmatory Factor Analysis (CFA), and comparatively analyzed with Exploratory Structural Equation Modeling (ESEM). To further investigate the relationships between SMF and associated constructs, path analyses were conducted. The results revealed a refined brief scale with three factors within the ESEM

framework, demonstrating excellent fit (χ^2= 43.620, df = 33, p = .083; RMSEA = .046, p = .54; CFI = .984; TLI = .967; SRMR = .033) and satisfying reliability (ω_F1= .75; ω_F2= .89; ω_F3= .73). Our findings also indicated that FoMO mediates the relationship between trait anxiety and SMF, predominantly through its fear component. Additionally, problematic social media use was identified as a moderator in the connection between SMF and apathy, a key aspect of BP. These outcomes highlight the complex interplay between personality traits and the psychological impact of social media usage.

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Darts' fast-learning reduces theta power but is not affected by Hf-tRNS: A behavioral and electrophysiological investigation

Authors: Ester Cornacchia[None]; Valerio Manippa[None]; Giorgia Francesca Scaramuzzi[None]; Anna Concetta Spina[None]; Francesca Amico[None]; Annalisa Palmisano[None]; Gaetano Scianatico[None]; Richard Buscombe[None]; Richard Avery[None]; Volker Thoma[None]; Davide Rivolta[None]

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Sports trainers have recently shown increasing interest in innovative methods, including transcranial electric stimulation, to enhance motor performance and boost the acquisition of new skills during training. However, studies on the effectiveness of these tools on fast visuo-motor learning and brain activity are still limited. In this randomized single-blind, sham-controlled, between-subjects study, we investigated whether a single training session, either coupled or not with 2mA online high-frequency transcranial random noise stimulation (hf-tRNS) over the bilateral primary motor cortex (M1), would affect dart-throwing performance (i.e., radial error, arm range of motion, and movement variability) in 37 healthy volunteers. In addition, potential neurophysiological correlates have been monitored before and after the training through a portable electroencephalogram. Results revealed that a single training session reduced radial error and arm range of motion during the dart-throwing task, but not movement variability. Furthermore, after the training, resting state-EEG data showed a decrease in theta power. Radial error, arm movement, and EEG were not further modulated by hf-tRNS. This indicates that a single training session, regardless of hf-tRNS administration, improves dart-throwing precision and movement accuracy. However, it does not improve movement variability, which might require multiple training sessions. Theta power decrease could describe a more efficient use of cognitive resources due to the fast dart-throwing learning. Further research could explore different sports by applying longer stimulation protocols and evaluating other EEG variables to enhance our understanding of the lasting impacts of multi-session hf-tRNS on the sensorimotor cortex within the framework of slow learning and training assistance.

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Contributo alla validazione italiana della "Motivation to have a Child Scale"(MSC)

Author: Nicla Cucinella[1]

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La Motivation to have a Child Scale (MCS; Brenning et al., 2015; Gauthier et al., 2007) rileva la motivazione ad avere un figlio nell'ottica della Self-Determination Theory (SDT; Deci & Ryan, 2000). La scala comprende 20 item che valutano 5 tipi di motivazione. Vari studi hanno fornito evidenze empiriche a supporto di buone proprietà psicometriche della stessa, suggerendo che possa essere uno strumento utile nell'indagine sulla motivazione ad avere un figlio. Tuttavia, nel contesto italiano non ne esiste ancora una versione validata.
La ricerca mira a valutare le caratteristiche psicometriche della versione italiana dell'MCS. I partecipanti sono 447 giovani adulti (femmine = 74%) tra i 18 e i 30 anni (M = 22.01, SD = 3.27). Al fine di valutare la struttura fattoriale, sono stati testati 3 modelli alternativi mediante la tecnica dell'analisi fattoriale confermativa. I risultati hanno evidenziato come il modello a 5 fattori correlati sia quello con il migliore adattamento ai dati, X2 (160) = 358.19, p < .001, CFI = .993, RMSEA = .053 (90% C.I. .045, .060). La scala mostra anche una buona affidabilità, sia in termini di single item reliability indicator ρi (con valori compresi tra .50 e .88, con l'eccezione dell'item 12, ρi= .37) che in termini di composite reliability indicator ρc (con valori compresi tra .95 e .97).
Complessivamente, i risultati indicano che la versione italiana dell'MCS può essere uno strumento promettente nel contesto di ricerca basato sull'SDT, che può essere utilizzato in programmi di intervento volti a promuovere il benessere delle coppie.

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Assessing Sleep, Circadian Rhythms and Mood: development of the revised version of SCRAM questionnaire.

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Aim: The study aims to validate a revised version of the SCRAM questionnaire, called rSCRAM, which incorporates items to measure anxious mood alongside sleep quality, chronotype, and depressive symptomatology. Materials and Methods: Data from 486 Italian participants aged 18 to 77(343 F, Age M = 26.9 ± 10.1) underwent two distinct analyses. In Study 1, a principal component analysis (PCA) was conducted on commonly used anxiety questionnaires to select representative items for inclusion in the rSCRAM. In Study 2, after including the anxiety subscale, a two-step analytical strategy consisting of exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA) was employed. Results: The EFA revealed a 4-factor model with 16 items, confirming the inclusion of anxious mood alongside sleep, circadian preferences, and depressive symptoms. CFA confirmed this structure with excellent fit indices. The rSCRAM questionnaire demonstrated excellent internal consistency (Cronbach's α values ranging from 0.72 to 0.90), strong test-retest reliability over 2 weeks (r ranging from 0.73 to 0.82), and high correlations for convergent validity, with low correlations for divergent validity. Inclusion of the anxiety scale expands the utility of the instrument in assessing mental health constructs within a single tool. Conclusions: The rSCRAM is a comprehensive tool for assessing sleep quality, chronotype, and depressive and anxious mood, as well as their interrelationships. The inclusion of anxiety scale expands its utility in assessing mental health constructs within a single instrument. The study showed the rSCRAM reliability in measuring sleep quality, circadian phase, as well as depressive and anxious mood.

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Spike-time-dependent plasticity induction reveals dissociable ventral and supplementary premotor-motor pathways to automatic imitation.

Author: Sonia Turrini[None]

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Introduction: Humans tend to spontaneously imitate others'behavior, even when detrimental to the task at hand. The Action Observation Network (AON) is consistently recruited during imitative tasks. However, whether automatic imitation is mediated by cortico-cortical projections from AON regions to the primary motor cortex (M1) remains speculative. Similarly, the potentially dissociable role of AON-to-M1 pathways involving the ventral premotor cortex (PMv) or supplementary motor area (SMA) in automatic imitation is unclear.
Methods: Here, we used cortico-cortical paired associative stimulation (ccPAS) to enhance or hinder effective connectivity in PMv-to-M1 and SMA-to-M1 pathways via Hebbian spike-time-dependent plasticity (STDP) to test their functional relevance to automatic and voluntary motor imitation.
Results: ccPAS affected behavior under competition between task rules and prepotent visuomotor associations underpinning automatic imitation. Critically, we found dissociable effects of manipulating the strength of the two pathways. While strengthening PMv-to-M1 projections enhanced automatic imitation, weakening them hindered it. On the other hand, strengthening SMA-to-M1 projections reduced automatic imitation but also reduced interference from task-irrelevant cues during voluntary imitation.
Discussion: Our study demonstrates that driving Hebbian STDP in AON-to-M1 projections induces opposite effects on automatic imitation that depend on the targeted pathway. Our results provide

unprecedented causal evidence of the functional role of PMv-to-M1 projections for automatic imitation, seemingly involved in spontaneously mirroring observed actions and facilitating the tendency to imitate them. Moreover, our findings support the notion that SMA exerts an opposite gating function, controlling M1 to prevent overt motor behavior when inadequate to the context.

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Preliminary validation of the Exam Metacognition Inventory

Authors: Aurora Calcagno[1]; Vanessa Muscolino[1]; Naomi Caccioppo[1]; Rossana Rechichi[1]; Teresa Papalia[1]; Daniele Mollaioli[1]

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Metacognition, defined as the awareness and regulation of one's cognitive abilities, plays a crucial role in academic performance. Recent studies have highlighted how metacognition significantly influences academic outcomes through students' ability to monitor and regulate their own learning. Despite these insights, there remains a notable gap in the availability of psychometric tools specifically designed to assess metacognition in the context of academic exams, which is critical for precisely measuring and understanding student learning behaviors and outcomes.
The aim of this study was to develop a new psychometric instrument, the ***Exam Metacognition Inventory*** (EMI). The initial pool of items was derived from the adaptation of the Italian version of the *Metacognition Questionnaire* (MCQ-30). The measurement's factor structure and criterion validity were examined using a convenience sample of 196 university students from southern Italy. A principal-axis Exploratory Factor Analysis with oblique (*Oblimin*) rotation was conducted on a 30-item preliminary version. The instrument revealed a three-factor structure—Metacognitive Knowledge, Regulation, and Responsiveness—with strong internal reliability (Cronbach's alpha ranging from 0.80 to 0.91) and adequate criterion validity. Based on the item-total correlation coefficients, the final version of the instrument was reduced to 15 items, with 5 items per subscale. All subscales of the EMI showed significant correlations with all five subscales of the MCQ-30.
These preliminary results confirm the robust psychometric properties of the Exam Metacognition Inventory and underscore the importance of identifying specific metacognitive issues in academic settings. Detecting these issues can facilitate targeted educational and psychological interventions to support academic students.

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Impact of Implied Motion on Time Perception and Human Spatio-Temporal Dynamics

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The psychological perception of time can expand or contract based on various non-temporal dimensions, one of which is motion. Prior research has established that moving subjects are perceived to last longer than static ones, even when motion is implied through static images depicting dynamic scenes. This study further examines how implied motion and subject category - distinguishing between inert objects and humans - affect time perception. Participants engaged in a temporal bisection task to evaluate the duration of still images that depicted either static or moving, objects or human subjects. Our findings indicate that images of moving subjects, especially humans, are perceived as lasting longer than those of static subjects and inert objects, respectively. Additionally, reaction time analysis revealed a notable interaction between image orientation and duration: participants responded faster to rightward-oriented images at longer durations and to leftward-oriented images at shorter durations, a relationship that was exclusively observed with images of moving humans. These results highlight that both the type of content and the depiction of motion significantly influence time perception. The distinct spatio-temporal associations for moving humans suggest a specialized processing bias, potentially rooted in evolutionary or social factors, underscoring the complexity of how humans interpret temporal information in visually dynamic contexts.

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Shareability: a novel perspective on human-media interaction

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Interpersonal communication in the twenty-first century is increasingly taking place within digital media. This poses the problem of understanding the factors that may facilitate or hinder communication processes in virtual contexts. Digital media require a human-machine interface, and the analysis of human-machine interfaces traditionally focuses on the dimension of usability. However, interface usability pertains to the interaction of users with digital devices, not to the interaction of users with other users. Here I argue that there is another dimension of human-media interaction that has remained largely unexplored, but plays a key role in interpersonal communication within digital media: shareability. I define shareability as the resultant of a set of interface features that: (i) make sharing of materials with fellow users easy, efficient, and timely (sharing-related usability); (ii) include features that intuitively invite users to share materials (sharing- related affordances); and (iii) provide a sensorimotor environment that includes perceptual information about both presented materials and the behavior of other users that are experiencing these materials through the medium at hand (support to shared experience). Capitalizing on concepts from semiotics, proxemics, and perceptual and cognItive neuroscience, I explore potential criteria to asses shareability

in human-machine interfaces. Finally, I show how these notions may be applied in the analysis of three prototypical cases: online gaming, visual communication on social media, and online distance teaching.

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L'evoluzione della nostalgia: un'esplorazione scientometrica

Authors: Eleonora Diletta Sarcinella[1]; Francesca Borghesi[2]; Katusha Gerardini[1]; Andrea Gaggioli[1]; Alice Chirico[1]

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All'interno dell'indagine scientifica sulle emozioni, si sta affermando un approccio che valorizza il ruolo della cultura e del contesto nel dare forma alle emozioni (es., il paradigma costruttivista). Tuttavia, l'influenza di cultura e contesto restano complessi da analizzare e tale impresa diviene ancora più ardua se ci si focalizza su concetti emotivi complessi. È il caso della nostalgia, attualmente descritta come un'emozione complessa positiva con sfumature negative legate alla perdita. Avvalendosi di questa emozione come caso studio, intendiamo indagare l'evoluzione di tale concetto, attraverso l'applicazione di un approccio computazionale di analisi scientometrica. Lo scopo è approdare a una sistematizzazione delle evidenze teoriche, empiriche e multidisciplinari che riguardano tale emozione, delineandone la traiettoria evolutiva e proponendone un'interpretazione alla luce di eventi storici peculiari. Nello specifico, sono state mappate ricerche sulla nostalgia, con analisi di cluster e rete, da gennaio 1970 ad aprile 2024, con 20.955 articoli raccolti su Web of Science. I risultati indicano un panorama composito e complesso, dove la nostalgia evolve da malattia di giovani soldati svizzeri durante la prima guerra mondiale a promotrice di responsabilità sociale e cura verso le nuove generazioni durante i flussi migratori del XXI secolo. Dal 2020, tale fenomeno diviene centrale nella psicologia dei consumi, quale strategia per evocare nei consumatori specifici ricordi alla base del comportamento di acquisto. In conclusione, questo studio introduce un'innovazione metodologica e concettuale nello studio dell'evoluzione culturale di un termine emotivo, gettando le basi per un potenziale nuovo approccio di analisi, soprattutto, dei fenomeni emotivi complessi, come la nostalgia.

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Virtual reality in affective disorders: a pilot study on cognitive performance and electroencephalographic correlates of depression

Authors: Matilda Floris[1]; Claudio Gentili[2]; Francesca Mura[2]; Gaetano Valenza[3]

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Depression, one of the most frequently diagnosed conditions, leads to significant cognitive deficits and comorbidity. In recent decades, scientific research has focused on biomarker identification and technological advancements like virtual reality (VR) for diagnosis support. This study evaluates the role of theta band power recorded through a Geodesic cup during 5 minutes of resting state, linked to cognitive performance obtained in the Trail Making Test (TMT) A and B and the N-Back, performed by participants in a VR environment. The sample consists of 15 university students with depressive symptoms (PHQ - 9 ≥ 9) and 15 healthy controls (PHQ - 9 ≤ 5). The results show a statistically significant difference in the number of errors made in the TMT-A ($p = .034$), while no differences were recorded in theta band power. Subsequently, a hierarchical linear regression analysis was conducted through two models, to evaluate the role of depressive symptoms and of theta band power in the prediction of the errors made in the TMT-A. The Model 1 analyzed the role of Relative Theta Power, while the Model 2 considered the Absolute Theta Power. Both models showed that only the depressive symptoms can predict errors made in the TMT-A (Model 1: $p = .030$, Model 2: $p = .020$), contrary to theta band power. Moreover, the Akaike Information Criterion shows that Model 2 is preferable to Model 1. Overall, findings partly align with existing literature, highlighting the need for further studies.

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The Protective Role of Cognitive Reserve in Mediating Depressive Symptomatology in Patients with Multiple Sclerosis

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Cognitive impairment (CI) in Multiple Sclerosis (MS) affects between 40 and 65 percent of people with MS (pwMS), impacting memory, attention, information processing speed, and language (Amato et al., 2010). High levels of depression worsen cognitive symptoms: pwMS with depression perform poorly in working memory or information processing speed (van Geest et al., 2019). However, some studies have found that greater Cognitive Reserve (CR) protects against CI in pwMS (Santangelo et al., 2018).

Therefore, the aim of this study was to investigate the correlations between depression and sustained attention, working memory, and semantic fluency in a cohort of Italian PwMS, considering the effect of CR.

187 PwMS (W= 130; mean age=42.0 years; SD = 12.5), from the Bari University Hospital, underwent testing for semantic fluency (Word List Generation [WLG]), sustained attention and working

memory (Paced Auditory Serial Addition Test [PASAT]), Cognitive Reserve level (Cognitive Reserve Index questionnaire [CRIq]), and depressive symptomatology (Beck's Depression Inventory [BDI]). Statistically significant correlations emerged between WLG and CRIq, PASAT and CRIq, WLG and BDI, PASAT and BDI. GLM mediation analyses revealed that the direct effects of depression on PASAT and WLG scores were not statistically significant ($p>.05$). In contrast, the indirect effect (BDI → CR → PASAT and BDI → CR → WLG) was significant ($z=-2.29$, $p < 0.05$; $z=-2.49$; $p<0.05$). These results suggest that CR mediates the relationship between depressive symptomatology and information processing speed, sustained attention, and verbal fluency.

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Strumenti per la rilevazione della Qualità della Vita associata alla salute in persone con sclerosis multipla: una revisione sistematica COSMIN

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Obiettivi. Nella letteratura scientifica esistono diverse misure di esito riportate dai pazienti (PROMs) che misurano la qualità della vita (QoL) e la qualità della vita associata alla salute (HRQoL) delle persone con sclerosi multipla (SM). Tuttavia, non si ha conoscenza di quali tra questi strumenti siano i migliori in termini di validità, attendibilità, responsiveness ed interpretabilità. Questa revisione sistematica ha lo scopo di valutare le proprietà psicometriche e l'interpretabilità dei PROMs sulla (HR)QoL per le persone con SM.
Metodi. È stata condotta una revisione sistematica seguendo la metodologia COSMIN (COnsensus-based Standards for the selection of health Measurement INstruments) utilizzando i database MEDLINE, EMBASE, CINAHL, e PsycINFO. Nella ricerca non sono stati posti vincoli rispetto alla data di pubblicazione e la lingua degli studi. Sono stati inclusi lavori che valutavano almeno una proprietà psicometrica e l'interpretabilità degli strumenti (HR)QoL generici o specifici per la SM.
Risultati. Sono stati identificati 3625 abstracts, revisionati 264 articoli full-text, e inclusi 143 studi. Sono stati identificati 36 strumenti sulla (HR)QoL, 17 generici e 19 specifici per la SM.
Gli strumenti MSIS-29, MSQOL-54, SF-36, MUSIQOL, e FAMS sono i 5 più utilizzati per la rilevazione della HRQoL nella SM.
Conclusioni. L'estrazione dati e la valutazione della qualità degli studi sono in corso. Questa revisione offrirà un contributo alla letteratura del settore e supporterà i ricercatori e i clinici in una scelta consapevole degli strumenti generici e specifici per la rilevazione della (HR)QoL nella SM.

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Representational organization of grasping actions across motor execution and imagery

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While a robust body of studies suggests that motor performance and imagery share similar cortical networks, it remains unclear whether they also share the same representational organization. A previous study investigated the representational structure of three hand-action types during execution or imagery in motor-related areas. The results showed distinguishable response patterns but a consistent representational geometry of the different action types across the two conditions. Here, we investigated the representation of a larger set of grasping actions. Two groups of participants performed (N=9) or imagined (N=9) grasping 20 common objects during fMRI scanning. Representational dissimilarity matrices (RDMs) for each cortical area (Glasser-HCP Atlas, 360 parcels) and condition were derived, based on the GLM t-scores of each grasp. To identify areas with a similar representational geometry across conditions, we computed the correlation between execution and imagery RDMs. We found significant correlations ($p < 0.05$, Mantel test, FDR correction) in 41 areas, with the highest correlation coefficients in bilateral visual areas and left Intraparietal Complex. Finally, to determine whether this common representational structure was driven by a synergistic coding, we compared the RDMs from the significant areas with an RDM derived from a kinematic synergy model. While we found significant correlations ($p < 0.05$, FDR correction) in six and two brain areas for the execution and imagery conditions, respectively, no area showed significant correlation in both conditions, suggesting that the common representational structure across motor conditions may not be solely driven by synergistic coding.

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Examining size constancy dynamics in perception and action

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Our brain deals with visual impressions that change continually. Nonetheless, we experience the world as fairly stable. The neural basis of size constancy, i.e., the ability to achieve a stable experience of size even if the images projected onto the retina vary with viewing distance, remains largely unknown. In this study, we explored the temporal dynamics of the neural networks responsible for the size constancy of 3D objects when the object's size is judged compared to when the object is grasped by selecting an appropriate hand-size aperture. To this aim, we recorded electroencephalography from 64 channels while a motion capture system tracked arm movements. Furthermore, we investigated the role of multisensory integration in size constancy under conditions where vision was restricted and, as such, it did not prevail over other sensory modalities. Specifically, by systematically removing visual depth cues, we assessed whether the contribution of proprioceptive distance cues changed as a function of the visuomotor system. Preliminary results highlighted greater early components following big target objects as compared to small target objects, regardless of the task. We also found task-related differences at a later time window, revealing a P2 component greater for size judgment than grasping. These findings provide new evidence supporting the notion that size constancy for 3D real objects at actual distances takes place at early processing stages and that early visual processing remains unaffected by task demands.

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Yoga, Cognitive Health, and Emotional Well-being. A Systematic Review on Healthy Young Adults

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Could yoga, with its mind-body approach, improve cognitive and emotional well-being in young adults? Research indicates that yoga provides mental health benefits, but studies on young adults are still scarce. The growing popularity of yoga among young adults - a population undergoing significant cognitive and emotional changes and adaptations - supports the importance of studying its effects on their well-being. Accordingly, this systematic review aims to investigate the effects of yoga practice on cognitive and emotional processes in healthy young adults (18-30 years old).
The review protocol has been registered on PROSPERO platform (ID: CRD42024527762). A systematic literature search has been performed on 16 March 2024 on PubMed, PsycInfo, and Scopus. The analysis considers yoga practice, both individual/group, in-person/online, with no restrictions on

type or duration. The interest group comprises yoga practitioners, compared to control subjects practicing free-body exercise or with no intervention. Studies with at least one cognitive or emotional process evaluation are considered. Studies combining yoga with other activities or treatments are excluded. Literature screening, data extraction, and risk of bias assessment are independently conducted by two reviewers.
A total of 6148 articles have been extracted, of which 2172 were duplicates. From the first analysis, it appears that yoga provides cognitive and - to a greater extent - emotional benefits in young adults, regardless of the practice type.
A better understanding of yoga effects on young adults' cognitive and emotional functions can help promoting well-being and personal success in this population.

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Olfactory targeted memory reactivation during sleep as a tool to modulate sleep and dreams

Author: Bianca Pedreschi[1]

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The field of dream engineering aims to develop techniques to modify nocturnal dreams systematically to investigate their significance and function. The so-called targeted memory reactivation (TMR) protocol involves pre-sleep associative conditioning, where a memory task is learned while sensory cues are presented. Presenting these cues during sleep has been shown to bias memory consolidation towards the learned content. If dreams reflect sleep-dependent memory consolidation, the hypothesis would therefore be, that TMR also influences dream content.
We developed a protocol combining an odor-based TMR with an emotional memory task and a serial awakening paradigm for dream assessment while measuring high-density EEG. This experimental protocol requires the use of different odors to be associated with specific memories, represented by distinct thematic pictures. Therefore, we performed a preliminary investigation aimed at identifying a set of distinguishable, affectively neutral, non or mildly trigeminal odors.
Eleven monomolecular odors were selected from the available literature based on their affective neutrality, distinctiveness, and chemical-physical properties. Twenty-two participants completed a standardized procedure in which they assessed each odor for its valence, arousal, familiarity, distinguishability, and trigeminal nerve sensations. Participants also reported the potential association of each odor with specific memories or semantic categories. This systematic procedure will allow us to exclude odors that may induce the reactivation of remote memories in place of those paired during pre-sleep associative conditioning. This assessment is crucial for the design and implementation of the subsequent experiments

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The Additive Bias Implicit Association Task: a tool to detect and quantify the additive bias

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The term "additive bias" refers to the typically human tendency to favor choices or actions that involve adding new elements, rather than eliminating pre-existing elements. Previous research and historical anecdotes across multiple fields have demonstrated that this tendency toward addition can significantly impair decision-making and problem-solving abilities, often leading to suboptimal solutions. Taking inspiration from psychology research on implicit association mechanisms, I developed a tool, the Additive Bias Implicit Association Task (ad-IAT), to detect and quantify the additive bias in an implicit way. The present research describes three studies in which, using the ad-IAT, I demonstrated that individuals automatically associate positive concepts to additive actions and negative concepts to subtractive actions. Importantly, my research also shows that the aforementioned tendency toward addition is negatively correlated with the choice and implementation of subtractive actions during a problem-solving task. Collectively, these findings underscore the efficacy of the ad-IAT in uncovering and measuring additive bias, providing deeper insights into its impact on human behavior.

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Io, tu e ···lo smartphone: differenze di interazione digitale tra generazioni

Author: Alba Liso[1]

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Al giorno d'oggi siamo obbligati a interagire con la tecnologia per accedere a molti servizi essenziali come le operazioni bancarie, quelle amministrative e quelle anagrafiche. Mentre le nuove generazioni hanno acquisito la capacità di svolgere tali attività direttamente nel mondo digitale, le vecchie generazioni, abituate a eseguirle nel mondo fisico, si trovano costrette a adattarsi alla nuova situazione. Classicamente, infatti, si parla di Immigrati Digitali (ID) e Nativi Digitali (ND) (Prensky,

2001) sottolineando le differenze culturali e di età di apprendimento della competenza che esistono tra i nati prima e dopo il 1980. Nonostante queste differenze portino a gravi problemi di inclusione digitale, sia dal punto di vista dell'accesso ai servizi che di quello professionale, non esistono studi che abbiano indagato in modo quantitativo le differenze di prestazione tra generazioni, anche al fine di individuare il processo di acquisizione della competenza.
Il presente lavoro ha voluto descrivere in modo quantitativo la prestazione di interazione digitale prendendo in considerazione alcuni parametri comportamentali. Sono stati reclutati partecipanti ID e ND ai quali è stato richiesto di ricercare determinate informazioni su Google e di utilizzare WhatsApp per chattare con un contatto abituale. Le mani dei partecipanti sono state videoregistrate. I video hanno consentito di misurare i seguenti parametri: i) velocità di digitazione, ii) numero di errori di digitazione, iii) numero di utilizzo di suggerimenti di testo, iv) numero di errori non corretti, v) stile di digitazione (due pollici vs indice mano destra). I risultati hanno mostrato notevoli differenze tra i due gruppi sperimentali.

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Decision-Making Factors in Insanity Assessments: A Systematic Review

Authors: Simona Casale[1]; Giovanna Parmigiani[2]; Clara Gangemi[1]; Folco Panizza[1]; Gustavo Cevolani[1]; Stefano Ferracuti[2]; Pietro Pietrini[1]

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Forensic psychiatric evaluations are mandatory for the insanity assessment but face significant challenges related to their accuracy, accountability, and transparency. The lack of standardised methods makes it extremely difficult for experts to agree on insanity evaluations. A comprehensive understanding of the assessment processes and the biases influencing forensic psychologists and psychiatrists is essential for improving their reliability and standardising the methodology.
This systematic review aims to identify the factors that influence assessments of insanity. The investigation focuses on the pieces of information (e.g., personal information and psychiatric information about the defendant, information about the defendant's criminal record and the committed offence) which tend to guide the decision-making process of psychologists and psychiatrists appointed by the Court to assess the defendant's insanity.
This systematic review adheres to the PRISMA guidelines. The search will be conducted on the following electronic databases: PubMed, CINAHL, PsycINFO, Web of Science and Scopus. It will include studies searched through reference lists of relevant review papers and references of included/excluded studies with no limitations on the year of publication. Two reviewers will independently make a screening of titles and abstracts for eligibility, followed by a detailed review of full papers. Discrepancies will be resolved through discussion or consultation with a third reviewer.
This systematic review seeks to enhance comprehension regarding the limitations and strengths inherent in the decision-making processes of expert psychologists and psychiatrists in charge of evaluating the defendant's insanity, a fundamental initial step towards standardising forensic evaluations.
Keywords: Decision-making; insanity assessment; forensic setting; cognitive bias

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La difficoltà percettiva nell'euristica di causalità

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Un recente filone di ricerca si è focalizzato nella comprensione dei meccanismi e dei processi alla base dei bias cognitivi, all'interno di contesti sperimentali ove tali fenomeni risultano ridotti nella loro entità.

Con particolare riferimento all'euristica di causalità, per la quale le persone sono portate ad inferire una relazione causale anche quando questa non è presente, il nostro studio ha testato la veridicità di una spiegazione di un modello teorico, relativa alla capacità di alcune manipolazioni superficiali degli stimoli presentati di produrre una mitigazione dell'illusione di causalità.

Un primo studio, coinvolgente 200 partecipanti, ha supportato, contrariamente alle predizioni del modello d'interesse, che l'aumento della difficoltà percettiva nel compito non sia in grado di indurre una variazione nell'entità dell'illusione di causalità.

Un secondo esperimento, coinvolgente 100 partecipanti, ha proposto una diversa manipolazione sperimentale basata nuovamente sull'aumento della difficoltà percettiva, producendo lo stesso pattern di risultati del primo esperimento.

Vengono dunque discusse le implicazioni teoriche derivanti da questi due esperimenti.

https://www.researchgate.net/publication/376262740_EXPRESS_Does_perceptual_disfluency_affect_the_illusion_of_causality

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Cognitive conflict effects on stimulus processing and consequent memory performance.

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The use of controlled processes to resolve cognitive conflict can have various effects on performance in memory tests. There are two theoretical hypotheses in this regard. According to the "competitive" hypothesis, using controlled processes to resolve cognitive conflict will impair a deep stimulus encoding, and consequently its memory. According to the "collaborative" hypothesis, the conflict requiring the use of controlled processes would favour the encoding and subsequent memory performance of the stimuli involved in it. The study's objective is to investigate cognitive conflict effects and interactions (i.e., stimulus and response-level conflict) on memory performance and the role of encoding level in modulating that effect using different paradigms. Specifically, we took into consideration the paradigms often used in studying cognitive conflict effects on performance (i.e., task-switching, and Flanker). The preliminary results suggest that cognitive conflict effects seem to be independent of the level of stimulus processing. The task-switching paradigm seems to nullify both stimulus and response-level conflict effects on memory performance in favour of the effect of stimuli (i.e., target or distractor). To conclude, the further cognitive effort required by the tasks seems to hinder cognitive conflict effects on memory performance.

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The effect of hand actions on numerical magnitude and order processing

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Many studies suggest that numerical abilities develop through sensorimotor interaction with the environment. In line with this view, it has been shown that repeated execution of grasping or pointing action impacted the performance in a subsequent number magnitude task. Specifically, the distance effect, a typical numerical effect consisting in faster response times when comparing farer (e.g., 1-5) rather than closer (e.g., 4-5) numbers, was enhanced after grasping and reduced after pointing. In this study, we confirm and extend previous findings by investigating the role of grasping and pointing in the processing of number magnitude and order. Thirty-seven participants executed hand actions followed by numerical trials. Specifically, they repeated either pointing or grasping, prior to execution of either magnitude comparison (e.g., "Is 4 larger than 5?") or order judgment (e.g., "Are 4 5 6 in order?"). An ANOVA was conducted for each task, with type of action, number magnitude, and number distance as within-subjects factors, and with task order and action order as between-subjects factors. We found that in magnitude comparison the distance effect disappeared after pointing, while the effect was preserved after grasping. In the order task, no difference between grasping and pointing conditions was observed; however, the factor action interacted with numerical distance, and with the order in which the actions were performed. Overall, these results confirm previous findings on the involvement of sensorimotor mechanisms in the processing of cardinal numbers. However, further investigations are needed to clarify the role of action mechanisms in the processing of ordinal numbers.

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The dynamic duo of reactive control: Do two reactive control mechanisms exist?

Authors: giada viviani[1]; Ettore Ambrosini[2]

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According to the Dual Mechanism of Control (DMC), two cognitive control mechanisms exist, proactive and reactive control. Nonetheless, our recent electrophysiological findings potentially pave the way to three mechanisms, with two of them falling under reactive control: an early one engaged before conflict based on stimulus-attention associations and a late one engaged after conflict detection to solve response conflict. We thus preregistered a behavioural study (https://osf.io/g2s5j/) to explore the interplay between these reactive mechanisms in resolving conflict in a spatial Stroop task. To assess whether one exists even when the other is engaged, we manipulated them simultaneously. To do so, we manipulated the item-specific proportion congruency (ISPC), modulating early reactive control level based on the likelihood of conflict signalled by specific stimulus characteristics, and response conflict (RC), a novel manipulation modulating late reactive control level based on the relative probabilities associated to the co-activated responses, the correct and the irrelevant ones. We then used trial-level multilevel modelling analysis to test our a-priori hypothesis that they do not only co-exist, but also interact in an antagonist way: a higher early conflict resolution would leave less response conflict remaining to be solved. Our results supported indeed the existence of two reactive control mechanisms, but they revealed that they operated independently in an additive way.

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Electrophysiological evidence for differing autobiographical memory retrieval routes

Authors: Gianmarco Convertino[1]; Giuliana Mazzoni[2]; Jessica Talbot[2]; William McGeown[3]

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Theoretical models of autobiographical memory often describe two distinct retrieval modes which can be utilised to retrieve past events. Direct retrieval is considered effortless and immediate, whilst generative retrieval requires a deliberate search process to successfully access a memory. To our

knowledge, no study has explored how these two retrieval modes differ in relation to their neural temporal activations. In the present study, 26 participants completed a memory task whilst their brain neurophysiological activity was recorded via a 40-channel electroencephalography cap. Single words were presented on screen and participants were instructed to press the spacebar to indicate the moment a specific autobiographical event was accessed. After reporting which retrieval mode was used, participants elaborated the memory in as much as detail as possible and answered a series of follow up questions (e.g., how personally significant the event was). Preliminary analysis of behavioural data revealed that participants accessed direct memories significantly faster and direct memories were rated as significantly more detailed and personally significant. Results from ongoing EEG data analysis will be discussed in relation to autobiographical memory theories.

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Mixed transcortical aphasia after stroke: a single case report with advanced disconnectomic analyses

Authors: Irene Bellin[1]; Arianna Menardi[2]; Serena De Pellegrin[1]; Antonio Luigi Bisogno[1]; Carlo Semenza[1]; Maurizio Corbetta[1]; Antonino Vallesi[3]

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Mixed transcortical aphasia (MTA) represents an uncommon aphasic syndrome, characterized by severe deficits in both comprehension and production across oral and written linguistic modalities. Individuals affected by MTA typically demonstrate retention of repetition abilities, often manifesting as echolalia. In the present single case study, we report the case of a woman who presented with MTA symptoms after a left hemisphere ischemic stroke involving perisylvian areas. She presented, as expected, with poor comprehension and reduced spontaneous production abilities, while repetition was preserved for words, short sentences, and numbers. Notably, her reading abilities remained intact, in contrast with several previously reported MTA cases. We describe in detail her linguistic performance with an extended quantitative evaluation, as well as a qualitative assessment of non-verbal cognitive abilities. To further assess the brain-behavior relationship, we employed recently developed lesion-based approaches for probabilistic estimation of white matter disconnections to reveal which white matter tracts are likely related to the reported pattern of language impairment. The results showed a major disconnection of the left arcuate fasciculus, left inferior fronto-occipital fasciculus, left inferior longitudinal fasciculus, left optic radiation, and anterior commissure. The observed impairments of the patient in the repetition of long sentences and of numbers exceeding three digits might hence be explained based on the disconnection of the arcuate fasciculus' long and posterior branches, affecting short-term memory. Conversely, her preserved ability to repeat limited verbal material is supported by the intact anterior branch of the left arcuate fasciculus.

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Lunch & poster 2 / 301

Adjusting our behavior in social settings: the role of motor inhibition

Author: Aurora Manini[1]

Co-authors: Noemi Giacobbe [2]; Nicola Canessa [1]; Claudia Gianelli [2]

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Response inhibition is a multifaceted process involving either the ability to withhold a speeded motor response prior to its initiation, or the ability to cancel a response after it has been initiated (Wright et al., 2014). Individual differences in the ability to withhold inappropriate responses have been extensively investigated with different variants of the Go/No-Go task (e.g., Chowdhury et al., 2017; Wessel et al., 2017; Young et al., 2017), varying with respect to the colour and shape of stimuli, the relative proportion of Go/No-Go trials, and inter-trial intervals. To date, these manipulations were mainly used to investigate motor inhibition performance at the individual level, but what happens to cognitive processes traditionally regarded as individual, like attention or inhibitory control, when a social component is considered? In this pre-registered study, we aim to validate a social version of the classical Go/No-Go task both in the laboratory and online. In these two settings, we are going to compare participants'performance (accuracy and reaction times) in both individual and social conditions to test 1) whether the mere presence or the interaction with another person affects our control over prepotent motor responses, and 2) whether the degree of shared attention and goals, e.g. when coordinating the efforts jointly or competing, is reflected in the individual performance. Overall, we expect to report enhanced inhibitory capacity when comparing social vs. individual conditions, and stronger modulations when a joint vs. competitive goal is pursued (e.g., faster responses but more errors in the latter).

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No

Lunch & poster 2 / 319

Beyond Dichotomies: the Semantic Gradient in a Picture-Word Stroop Task

Authors: Irene Di Pietro[1]; Giada Viviani[2]; Marco Petilli[3]; Antonino Vallesi[4]; Marco Marelli[3]; Maria Montefinese[2]; Ettore Ambrosini[4]

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In the verbal Stroop Task, the interference induced by irrelevant information was observed to have a graded impact on the Stroop Effect, dependent on the strength of semantic relationships between relevant and irrelevant stimulus dimensions (i.e., Semantic Gradient). While some studies have shown the predictive power of continuous similarity measures at the item level, others have oversimplified semantic processes neglecting their continuous nature. Typically, this involves dichotomizing semantic similarity by merely contrasting weakly related words with strongly related ones or manipulating membership within a semantic category. However, to fully understand the graded impact of conflicting semantic information, it is crucial to employ continuous measures of semantic similarity. To address this gap, we used text-based distributional models to extract a continuous measure of semantic similarity between concepts and explored its effect on vocal response latencies in a Picture-Word Stroop Task, where participants name pictures while ignoring the superimposed words. Remarkably, our preliminary findings unveiled a negative linear effect of continuous semantic similarity on naming performance, even after controlling for orthographic and association similarities as well as other low-level confounders at both the word and picture levels. Understanding this gradient of interference through continuous measures, while controlling for other variables, can enhance our comprehension of linguistic mechanisms and shape the development of more precise theoretical frameworks, depicting word meanings as distributed representations within a continuous mental space.

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Lunch & poster 2 / 245

Physical exercise and risk-taking behavior: how are they related one another?

Authors: Elena Turco[1]; Ester Tommasini[2]; Daniela Tavian[2]; Alessandro Antonietti[2]; Paola Iannello[2]

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Evidence shows that physical exercise (PE) improves psychological wellbeing. PE induces the release of endorphins, which in turn increase the production of dopamine. This rising has been associated with increased risk-taking and reward-seeking behavior. However, some evidence points out that physical exercise acutely reduces risk-taking related to substances abuse, decreasing cravings.
To better understand the relationships between PE –with or without concurrent electrical stimulation of the muscles - and risk-taking, we carried out a pilot study with a convenience sample of 20 healthy men (age range = 18-55 years; M = 37.8 SD = 9.48). Participants were randomly allocated in either the cycling group (N =10) or the cycling with superimposed electrical myostimulation group (N = 10). Electrical stimulation was applied bilaterally to lower limbs. They underwent an interval training session of moderate intensity on a cycle ergometer for a single session and two times a week for six weeks. Participant performed the Balloon Analogue Risk Task (BART), after 24 hours since the single training (T1) and after the six weeks (T2). Preliminary results showed a decrease in risk-taking in the group with electrical stimulation (baseline: M = 51.1, SD = 49.5; T1: M = 40.0, SD = 9.26; T2: M = 44.4, SD = 7.80), while no changes were observed in the group without electrical stimulation (baseline: M = 37.7, SD =11.0; T1: M =36.7, SD = 9.34; T2: M = 38.6, SD =13.4). Our preliminary findings suggest that adding electrical stimulation during physical exercise may mitigate risk-taking.

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Lunch & poster 2 / 311

Reduced fMRI Functional Connectivity of Language-Related Cerebellar Regions of Schizophrenia Patients

Authors: Margherita Biondi[1]; Marco Marino[2]; Dante Mantini[3]; Chiara Spironelli[4]

[1] *Padova Neuroscience Center, University of Padova, Italy*

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Schizophrenia (SZ) is one of the most debilitating psychiatric disorder, in which the crucial role of cognitive deficits has been increasingly identified. However, the neural correlates underlying these impairments are still largely unknown. The cerebellum, conventionally tied to motor functions, is now recognized as a key region for cognition, and evidence of cerebellar abnormalities has been associated with SZ cognitive impairment. However, within-cerebellum spontaneous functional interactions are often overlooked.

The present study explored the resting state functional connectivity (rsFC) within the cerebellum and its link to cognition in 74 SZ patients and 74 matched healthy controls (HC). A new multi-domain task battery (MDTB) cerebellar parcellation was applied. In addition, we investigated the relationship between SZ patients'rsFC and their symptoms, as assessed with the Positive and Negative Syndrome Scale (PANSS).

SZ patients exhibited significant differences in cerebellar connectivity compared to HCs, particularly in regions involved in attention, language, and memory. Correlations between connectivity values and affective symptoms were identified. Distinct connectivity patterns were found in post-hoc analysis when splitting SZ patients in three sub-groups based on their vulnerability to hallucinatory phenomena: non-hallucinating and low-hallucinating patients showed higher cerebellar rsFC than high-hallucinating patients, especially in language- and motor-related areas, suggesting a gradient of cerebellar connectivity alterations corresponding to hallucination vulnerability.

Our results provided novel insights into cerebellar abnormalities in SZ, highlighting the role of within-cerebellum connectivity in cognitive deficits. The observed connectivity patterns in language-related regions might contribute to understanding linguistic mechanisms and auditory verbal hallucinations in SZ.

If you're submitting a poster, would you be interested in giving a blitz talk?:

Yes

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Lunch & poster 2 / 348

Bodily processing shapes social cognition across the life cycle: impact on empathy and theory of mind

Author: Silvia Canino[1]

Co-authors: Valentina Torchia [1]; Erica Dolce [1]; Simona Raimo [1]; Liana Palermo [1]

[1] *Magna Graecia University, Catanzaro (Italy)*

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Interoception, the perception of the body's physiological condition, underlies fundamental emotional and cognitive processes. However, how the conscious representation of bodily signals influences the understanding of others' minds remains unclear. This study aims to investigate whether individual differences in the interoceptive processing, in terms of interoceptive accuracy (IAcc), sensibility (ISe), and awareness (IAw), shape core processes underlying social cognition (i.e., empathy and Theory of Mind, ToM) across the lifespan.

The study involved 189 healthy individuals grouped by age: 32 children (7-10 yrs), 55 adolescents (12-14 yrs), and 100 adults (18-55 yrs). They completed tasks probing affective/cognitive ToM and empathy, IAcc (heartbeat tracking task), IAw (accuracy-confidence correlation), and an ISe questionnaire.

IAcc negatively correlated with affective ToM in adults and cognitive empathy in adolescents, possibly because enhanced abilities in perceiving the inner body result in stronger boundaries between themselves and others from adolescence onwards. IAw was negatively associated with empathy only in children, highlighting developmental differences in metacognitive awareness of bodily signals. Conversely, ISe consistently showed a positive correlation with empathy across all age groups, indicating a stable trait-like representation.

These findings support embodied and multifaceted models of social cognition, suggesting specific connections between social cognition and interoceptive dimensions at different life stages. Moreover, they are consistent with evidence suggesting the discrepancy between interoceptive dimensions.
Given the presence of social cognition and interoceptive difficulties in disorders like autism and schizophrenia, these insights could also prove valuable for clinical applications, such as creating personalized interventions for different stages of life.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Keynote talk, Lisa Toffoli / 480

Adapting to change: developmental, clinical and ecological perspectives on learning-based cognitive control

Corresponding Author: lisa.toffoli@phd.unipd.it

Cognitive control (CC) is a crucial tool for adaptation in daily life (Diamond, 2020; Moffitt et al., 2011). While traditionally viewed as a top-down mechanism (Diamond, 2020; Miyake & Friedman, 2012), recent evidence shows that implicit learning shapes CC in a bottom-up manner, optimizing cognitive resources based on environmental changes (Abrahamse et al., 2016; Braem & Egner, 2018). This aligns with the Dual Mechanism Model (DMC) (Braver, 2012), suggesting that individuals adopt reactive or proactive control strategies depending on implicit situational demands. Despite its importance, few studies have explored learning-based CC development. Existing findings suggest that it

stabilizes early in typical development and may be atypical in neurodevelopmental conditions such as ADHD (Gonthier et al., 2021; Cai et al., 2018).

In this presentation, using a neuro-constructivist framework (Karmiloff-Smith, 1992), I investigate learning-based CC from a clinical, developmental, and ecological perspective. Study 1 examines typically developing children (N=149, 5-14 years) using a Flanker task and cued-goNogo. Results show stable CC development in the Flanker task, while the cued-goNogo –which entails greater cognitive load –reveals optimal learning-based CC only from adolescence. The multi-centric Study 2 replicates these tasks with ADHD children (N=154), showing no deficits in learning-based CC, but a lack of improvement under increased cognitive load. Finally, Study 3 explores how digital content affects preschoolers' (N=42) learning-based CC using high-density EEG. Previous studies found negative short-term influence of digital exposure on CC, but cognitive engagement could potentially mediate these effects. Indeed, results reveal that children exposed to cognitively engaging cartoons show enhanced behavioral and neural learning-based CC compared to those watching passive content.

Overall, these findings carry theoretical and practical implications for neuropsychology and education.

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Symposia / 148

The origins of human rhythm: A comparative approach

Authors: >20 coauthors .[None]; Andrea Ravignani[None]

Corresponding Author: andrea.ravignani@uniroma1.it

Who's got rhythm? Why are we such musical, chatty animals? Human music and speech, almost anomalies for evolutionary biology, both feature rhythm among their building blocks. Many hypotheses try to explain the origins of rhythm capacities, but few are empirically tested and compared. Because music and speech do not fossilize, the comparative approach provides a powerful tool to tap into human cognitive history. Human-like rhythm behaviors may be found across a few species. Hence, investigating rhythm across species is not only interesting to zoology, but it is key to unveil when music-like behaviors appeared in human evolution. Here, I introduce the major hypotheses for the evolution of vocal rhythmicity, which link acoustic rhythms to vocal learning, gait, breathing, or group chorusing. I suggest how integrating approaches from ethology, psychology, neuroscience, modeling, and physiology is needed. I zoom in on some crucial species which are key to test alternative hypotheses on rhythm origins. Rhythm data from marine mammals and primates suggests that comparative research can benefit from ecologically-relevant setups, combining strengths from human cognitive neuroscience and behavioral ecology. Finally, I present human experiments where musical rhythm is created and evolves culturally due to cognitive and motoric biases. Both behavioral and neural data show an interplay between biology and culture. These results suggest that, while the full package may be uniquely human, many mammals share one or more building blocks of human rhythmicity. These biological biases may be amplified by cultural transmission to result in human musical rhythm as we know it.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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The Beat and Beyond: Unveiling the Roots, Development, and Applications of Human Musical Rhythm

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 106

Applications of Psychometric Network Analysis in Psychology

Author: Michela Zambelli[1]

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Psychometric Network Analysis represents a cutting-edge methodology for modeling psychological phenomena as interconnected systems of variables. This approach allows for the exploration of relationships among variables across individuals and over time (Borsboom et al., 2021). The fundamental structure of a psychometric network comprises nodes, which denote variables within a dataset, and edges, representing pairwise conditional associations between node pair. The accessibility of user-friendly software in the open-source R environment have facilitated the proliferation of network psychometrics across various disciplines in the psychological and social sciences. The symposium showcases five compelling applications of psychometric network analysis across diverse fields within Psychology, including personality, cognitive, clinical, and positive psychology. Costantini will provide an overview of psychometric network analysis, illustrating its application within personality psychology. Zagaria and colleagues explore the distinctiveness of orthorexia nervosa within the spectrum of eating disorders by applying network psychometrics to cross-sectional data. Tosi employs Cross-Lagged Panel Network (CLPN) models to investigate the longitudinal changes in the relationships between cognitive functions in patients with mild cognitive impairment. Andreoli and colleagues investigate the clinical validity of the Fully Idiographic Network Analysis (FINA) by comparing the clinician's anticipated psychological network for their patient with the patient's empirical network estimated on Ecological Momentary Assessment data. Finally, Zambelli and colleagues applied a Meta-Analytic Gaussian Network Aggregation (MAGNA) to investigate similarities and differences among the reciprocal interrelation of flourishing components across 22 countries.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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No

Symposia / 75

Psychophysiological Markers in Autism Spectrum Disorder: Current Evidence and Clinical Perspectives

Author: Donato Liloia[1]

[1] *Università di Torino, Dipartimento di Psicologia*

Corresponding Author: donato.liloia@unito.it

Autism spectrum disorder (ASD) comprises a heterogeneous group of neurodevelopmental conditions that pose a major public health challenge due to their increasing prevalence and the need for early diagnosis. Extensive research is currently focused on identifying susceptibility and diagnostic psychophysiological markers for these conditions using neuroimaging and other advanced computational methodologies. However, the current body of knowledge is sparse, and the development of robust, reliable, and valid psychophysiological markers remains an open challenge.
This symposium features a series of talks designed to present recent experimental evidence demonstrating the potential clinical value of various psychophysiological approaches in autism research. It also introduces new data and cutting-edge analyses aimed at deepening our understanding of the complex psychophysiology associated with ASD. Each talk will be conducted by a junior researcher, distinguished by hands-on technical expertise and a proven track record of peer-reviewed publications in clinical psychophysiology. The symposium will cover the use of functional magnetic resonance imaging (fMRI), structural magnetic resonance imaging (sMRI), electroencephalography (EEG), and clinical testing via cluster analysis.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Yes

Symposia / 86

ALTERED RESTING-STATE FUNCTIONAL CONNECTIVITY OF THE SALIENCE NETWORK IN AUTISM: PRELIMINARY FINDINGS

Authors: Margherita Attanasio[1]; Monica Mazza[2]; Ilenia Le Donne[1]; Anna Nigri[3]; Marco Valenti[2]

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[2] *Department of Biotechnological and Applied Clinical Sciences, University of L'Aquila, L'Aquila, Italy; Reference Regional Centre for Autism, Abruzzo Region, Local Health Unit ASL 1, Italy*

[3] *Neuroradiology Unit, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy*

Corresponding Author: margherita.attanasio@univaq.it

Individuals with autism spectrum disorder (ASD) show impairments in communication and social interaction and patterns of restricted and stereotyped behaviors and interests. Literature suggests that alterations of functional connectivity (FC) in brain networks may contribute to the manifestation of the clinical features of ASD. In our study, we focused on the Salience Network (SN), as playing a crucial role in the integration of external sensory information with internal emotional and bodily information. Using the Autism Brain Imaging Data Exchange II we investigated the resting-state FC of the target structures of the SN and its association with autism symptomatology in 29 ASD individuals compared with 29 typically developing (TD) individuals. Our seed-based connectivity results indicate alterations, both in increased and decreased FC, in the ASD group compared to TD individuals, involving brain regions implicated in the integration of sensory and social information, regulation of attention, emotion processing, and internal states. Finally, we found that the clinical features of ASD are mainly associated with an atypical FC of the anterior insula and the engagement of dysfunctional mechanisms for emotional and social information processing. These findings expand the knowledge about the differences in the FC of SN between ASD and TD, highlighting atypical FC between structures that play key roles in social cognition and complex cognitive processes. Such anomalies could explain difficulties in processing salient stimuli, especially those of a socio-affective nature, with an impact on emotional and behavioral regulation.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Psychophysiological Markers in Autism Spectrum Disorder: Current Evidence and Clinical Perspectives

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **299**

How has the outbreak of the COVID-19 pandemic shaped our autobiographical memories?

Authors: Clelia ROSSI ARNAUD[1]; Serena Mastroberardino[2]; Pietro Spataro[3]; Alessandro Santirocchi[1]; Federica Alessi[1]; Aicia Naser[1]; Maria Chiara Pesola[1]; Vincenzo Cestari[1]

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The COVID-19 pandemic forced governments to trace the contacts and places visited by those infected. This process of event reconstruction was designed to influence the transmission of the virus and relied primarily on the retrieval of personal memories of infected individuals. In our study, we investigated whether participants could provide contact tracing details and whether their memories were influenced by important events during the early stages of the pandemic. Participants had to complete an online form describing each day of the two weeks between the 27th of February 27 and the 12th of March 2020, providing as much information and detail as possible. We chose this particular period because, among other reasons, it included the day on which the Italian government became the first Western governing body to issue a decree to begin the Covid-19 lockdown. Using a linear mixed model, the results showed that participants were indeed able to report a large amount of information about people and places, and that recall was modulated by the occurrence of pandemic-related events (such as the suspension of all courses and the start of the national lockdown). We also observed a standard priority effect. Overall, our findings show how emotional salience can reshape autobiographical memory by prioritising the recall of details associated with stressful COVID-19-related events.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Differenze individuali e culturali nella memoria autobiografica: nuove prospettive sperimentali e neuroscientifiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / **242**

Le differenze individuali nella ricerca sperimentale

Author: Cristina Zogmaister[1]

Co-author: Francesco Fedeli [1]

[1] *Università degli Studi di Milano-Bicocca*

Corresponding Author: cristina.zogmaister@unimib.it

Questo simposio si propone di esaminare alcune sfide e opportunità nell'esplorare il ruolo giocato dalle differenze individuali nei contesti sperimentali. Dal punto di vista della psicologia sperimentale, introdurre le variabili di differenze individuali nella ricerca e studiarne gli effetti in interconnessione con le manipolazioni può essere di beneficio per comprendere meglio l'impatto delle manipolazioni stesse, può guidare la formulazione di nuove ipotesi esplicative circa le ragioni e i meccanismi della loro (in)efficacia, nonché permettere la tailorizzazione degli interventi e la creazione di interventi robusti a tali differenze.
Per la psicologia della personalità, queste stesse informazioni sulle differenze nel modo in cui le persone reagiscono alle manipolazioni aiuta a capire meglio queste differenze interindividuali (de Houwer et al., 2023, https://doi.org/10.1525/collabra.88334). Permette inoltre di capire e prevedere l'effetto differente che determinate esperienze possono avere sulle persone diverse (es. identificare persone "a rischio"di avere conseguenze negative a seguito di eventi aversivi).
Dopo un primo intervento di inquadramento teorico (Zogmaister) seguiranno le presentazioni di quattro ricerche che hanno seguito questo approccio, affrontando tematiche applicative, dimensioni di differenze individuali e interventi sperimentali diversi: differenze di personalità e formazione di preferenze di consumo (Fedeli, Zogmaister e Perugini), focus regolatorio e strategie comunicative nella persuasione a effettuare il download di un'app (Carfora, Festa, Pompili e Catellani), preferenza per l'intuizione o deliberazione nelle scelte legate all'alimentazione sostenibile (Scaglioni, Cavazza e Guidetti), il ruolo dell'identità nel modulare il legame tra valori culturali e comportamenti moralmente rilevanti (Giammusso, Travaglino Mirisola).

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 385

Exploring the Link Between Individual Differences in Personality Traits and Vicarious Approach/Avoidance Effect

Authors: Francesco Fedeli[1]; Cristina Zogmaister[1]; Marco Perugini[1]

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We investigated the link between individual differences in personality traits (measured with the HEXACO-100 and the HAS) and the Vicarious Approach/Avoidance (VAA) effect.

Three hundred twenty-three participants (age: M = 31.60, SD = 10.00) answered the HEXACO-100 and the HAS personality inventories. They then read two vignettes describing a model approaching or avoiding a target (i.e., a package of cookies). In the first vignette, the model approached cookies from a brand; in the second, a different brand was avoided. We assessed participants'attitudes and model-attributed attitudes toward the two targets, reliability and liking of the model, and attributed agency (i.e., whether the model was responsible for the choice to approach/avoid the target).

The VAA procedure proved effective. We found a significant VAA effect, d = 0.60, with participants expressing more positive attitudes toward products associated with the approach than those associated with the avoidance behaviors. Moreover, significant correlations emerged between the H, E, A, C personality, and Honesty HAS and participants'attitudes toward the approached target. As

for the facets, sentimentality, altruism, and diligence showed the highest correlations with the VAA effect.

These findings carry both theoretical and practical implications. Initially, we replicate the findings of Zogmaister and colleagues (2023a, b), demonstrating the robustness of the VAA effect. Additionally, the insights from this study can inform the development of more effective tailored (VAA-based) interventions that account for individual differences.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Le differenze individuali nella ricerca sperimentale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 26

Nel cuore del tempo: uno studio sperimentale sulla relazione fra enterocezione e percezione del tempo

Authors: Fiorella Del Popolo Cristaldi[1]; Luigi Micillo[2]; Nicola Cellini[1]; Giovanna Mioni[1]

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Corresponding Author: fiorella.delpopolocristaldi@unipd.it

Studi recenti suggeriscono che il nostro senso del tempo è legato all'attività dell'area sensoriale primaria dell'enterocezione. Pertanto, un migliore accesso ai segnali corporei, misurati oggettivamente (accuratezza enterocettiva) e riferiti soggettivamente (sensibilità enterocettiva), potrebbe spiegare una percezione più accurata del tempo. Tuttavia, le evidenze a favore di un legame tra enterocezione e percezione del tempo sono ancora frammentarie e si sa poco su una potenziale dissociazione tra elaborazione implicita ed esplicita del tempo. In questo studio abbiamo esplorato la relazione tra l'accuratezza e la sensibilità enterocettiva da un lato e le abilità temporali implicite ed esplicite dall'altro. Abbiamo utilizzato un compito di percezione del battito cardiaco per misurare l'accuratezza enterocettiva e il Porge's Body Perception Questionnaire per misurare la sensibilità enterocettiva. Abbiamo poi presentato a partecipanti adulti (età M=22,9, SD=2,39) un compito temporale implicito (foreperiod, N=28, 13 M) o esplicito (finger tapping, N=23, 11 M). I risultati hanno mostrato che una maggiore accuratezza e sensibilità enterocettive predicono un maggiore effetto foreperiod nel compito implicito, indicando che i partecipanti erano più capaci di interiorizzare le informazioni temporali per preparare la risposta motoria. Nel compito esplicito, abbiamo riscontrato che una maggiore sensibilità enterocettiva predice una minore variabilità temporale degli intervalli di tapping, indicando abilità temporali più accurate e precise. Nel complesso, i nostri risultati hanno confermato che la consapevolezza dei cambiamenti psicofisiologici gioca un ruolo nella percezione del tempo e nell'interiorizzazione delle informazioni temporali per eseguire le risposte motorie.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Ci siamo (di nuovo) dimenticati del corpo? Riscoprire l'interazione mente-corpo per comprendere i processi cognitivi ed emotivi

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 25

Ci siamo (di nuovo) dimenticati del corpo? Riscoprire l'interazione mente-corpo per comprendere i processi cognitivi ed emotivi

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Nonostante il "problema mente-corpo"affondi le radici in un'antica tradizione filosofica e psicofisiologica, il crescente interesse verso le neuroscienze cognitive e affettive ha determinato una crescente sproporzione del concetto di "corpo"in favore del solo cervello.
Sebbene il sistema nervoso centrale (SNC) svolga un ruolo fondamentale e imprescindibile a supporto dei processi mentali sani e patologici, è tuttavia riduzionistico limitarsi al suo esclusivo apporto, sottovalutando il contributo che il corpo e le sue relazioni bidirezionali col SNC offrono per la realizzazione dell'equilibrio omeostatico e dei processi psicologici cognitivi ed emotivi.
Ricominciare a investigare l'interazione mente-corpo è quindi di cruciale importanza per promuovere una maggiore comprensione di come si realizzano i processi cognitivi ed emotivi che caratterizzano la nostra vita mentale. Inoltre, lo studio dell'interazione mente-corpo e delle sue potenziali disregolazioni può avere implicazioni significative per la comprensione e il trattamento di varie condizioni patologiche neurologiche e psichiatriche.
L'obiettivo di questo simposio è riunire in uno spazio di discussione condiviso alcuni recenti contributi empirici che indagano l'interazione mente corpo da una parte in relazione a processi cognitivi ed emotivi di base (per es. percezione del tempo, percezione e rappresentazione corporea), e dall'altra nelle potenziali alterazioni riscontrabili in condizioni patologiche (per es. dolore cronico, disturbi dell'umore). Attraverso l'analisi critica di queste evidenze, ci si propone in ultima istanza di "rimettere il corpo al centro", promuovendo un ampliamento delle attuali conoscenze che può rappresentare un primo passo verso lo sviluppo di approcci terapeutici e preventivi volti a promuovere la salute e il benessere.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 43

Differenze individuali e culturali nella memoria autobiografica: Nuove prospettive sperimentali e neuroscientifiche

Authors: Chiara Mirandola[1]; Antonietta Curci[2]

[1] *Università telematica degli studi IUL*

[2] *Università degli Studi di Bari Aldo Moro*

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Il recupero dei ricordi autobiografici è un processo che supporta la formazione dell'identità personale, con periodi di maggiore o minore salienza rispetto alle varie fasi di vita. È, pertanto, un processo influenzato dalle differenze individuali e culturali, in cui l'elaborazione emotiva gioca un ruolo essenziale. Il presente simposio presenterà le più recenti prospettive teoriche, sperimentali e neuroscientifiche circa le differenze individuali e culturali nella memoria autobiografica.
Verranno presentati dati sulla distribuzione dei ricordi di diversi eventi personali e pubblici, negativi e positivi in ampi gruppi di partecipanti anche di diversa provenienza culturale (Cinesi vs Americani). Verranno esposti, inoltre, dati sulle diverse strategie di recupero di ricordi autobiografici tramite word cue, da cui si evince che partecipanti provenienti dagli Emirati Arabi mostrano una tendenza alla overgeneral autobiographical memory rispetto a partecipanti dell'area mediterranea e che l'uso delle strategie di recupero serve alla regolazione delle emozioni spiacevoli. Sarà discusso il ruolo del contenuto emotivo nel plasmare i ricordi personali, in particolare rispetto agli effetti della pandemia da COVID-19 sul recupero dei dettagli delle esperienze stressanti. Saranno, inoltre, presentati recenti studi in cui si mostra un aumento di connettività cerebrale negli individui HSAM (Highly Superior Autobiographical Memory) a carico della corteccia prefrontale mediale e della corteccia cingolata posteriore. Infine, verrà offerta un'accurata riflessione non solo sulle più efficaci metodologie per favorire l'emersione di ricordi autobiografici, ma anche sulla struttura stessa della memoria autobiografica e sulla sua accuratezza.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 118

The Beat and Beyond: Unveiling the Roots, Development, and Applications of Human Musical Rhythm

Authors: Carlotta Lega[1]; Alice Cancer[2]; Andrea Ravignani[None]; Martina Arioli[3]

[1] *University of Pavia*

[2] *Università Cattolica del Sacro Cuore, Milan*

[3] *University of Milano-Bicocca*

Corresponding Authors: carlotta.lega@unipv.it, alice.cancer@unicatt.it, andrea.ravignani@uniroma1.it, m.arioli8@campus.unimib.i

From tapping our foot while we listen to our preferred music to coordinating movements with others, rhythm plays a vital role in our lives. This symposium offers a multifaceted exploration of rhythm perception and performance, examining its evolutionary origins (phylogeny), development throughout life (ontogeny), and potential for clinical applications. Andrea Ravignani (Sapienza University of Rome) explores the evolutionary roots of rhythm, examining leading hypotheses and how studying rhythm in non-human animals can provide clues about our own rhythmic heritage. Martina Arioli (University of Milano-Bicocca) sheds light on the surprising early roots of rhythm perception, demonstrating that newborns are sensitive to rhythm and that prenatal exposure to rhythmic stimulation can enhance their attentional skills. Carlotta Lega (University of Pavia) examines how individual differences in musical reward sensitivity, intrinsic properties of musical stimuli and musical pleasure together shape individual rhythmic skills as well as interpersonal synchronization abilities. Alice Cancer (Università Cattolica del Sacro Cuore, Milan) delves into the world of rhythm-based interventions. Her study investigates the effectiveness of a program designed to improve reading skills in children with dyslexia, demonstrating promising results in both face-to-face and tele-rehabilitation settings. By bringing together different perspectives, the symposium seeks to present a multifaceted understanding of human rhythmic abilities, showcasing its significance in our perception, development and evolutionary history. Presenting complementary methodologies and approaches, this symposium will offer challenging perspectives on musical perception and musical production, providing new insight into the origin of human musicality.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 126

An introduction to psychometric network analysis with applications to personality psychology

Author: Giulio Costantini[1]

[1] *Università degli Studi di Milano-Bicocca*

Corresponding Author: giulio.costantini@unimib.it

Network psychometrics aims to model correlational patterns in psychological phenomena, such as traits, affects, behaviors, cognitions, desires, abilities, and environments, in terms of interactions among their basic constituents. Network psychometrics has become central to several subfields of Psychology, offering a novel perspective on several phenomena, including personality traits. Conceptualizing personality traits as networks allowed researchers to go beyond the assumption that they simply reflect the effects of unobservable latent variables, to focus instead on the possibility that they can emerge from the interactions among their basic constituents. Network psychometrics offers a toolbox of statistical techniques to model psychological dynamics in a way that is coherent with this view. I will introduce widespread network psychometric techniques, including techniques for modeling cross-sectional and longitudinal data, with examples from personality psychology.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Applications of Psychometric Network Analysis in Psychology

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 353

Ricerca sperimentale sugli atteggiamenti: l'importanza delle differenze individuali

Author: Cristina Zogmaister[1]

[1] *Università degli studi di Milano-Bicocca*

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Capire come e perché gli individui differiscono nelle loro risposte alle manipolazioni sperimentali è cruciale per avanzare nella conoscenza scientifica.
Partendo da alcune evidenze empiriche circa il ruolo giocato da tratti di personalità, stili cognitivi

e valori culturali nel plasmare le risposte degli individui alle situazioni e alle manipolazioni (es. personalità e attenzione, Mathews et al., 2003, https://doi.org/10.1080/13506280344000095; valori e conformismo, Lönnqvist et al., 2010, https://doi.org/10.1348/014466608X377396), questo contributo esplora il ruolo moderatore che le differenze individuali possono avere sull'impatto delle manipolazioni sperimentali, fornendo evidenze empiriche dalla letteratura e discutendone le implicazioni per la ricerca sperimentale. L'attenzione sarà focalizzata prioritariamente sugli studi relativi all'apprendimento degli atteggiamenti e preferenze, ma le implicazioni generali saranno applicabili anche agli altri ambiti della ricerca sperimentale.
Verrà proposta, infine, una riflessione sui benefici che possono scaturire dall'integrazione dell'esame delle differenze individuali nella ricerca sperimentale, sia nei termini di una migliore comprensione dell'efficacia delle manipolazioni sperimentali, sia in quelli dello sviluppo della conoscenza sulle differenze individuali.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Le differenze individuali nella ricerca sperimentale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 117

An empirical investigation of the clinical validity and utility of fully idiographic network analysis in clinical practice

Author: Giovanbattista Andreoli[1]

Co-authors: Chiara Rafanelli [1]; Giulia Casu [1]; Giulio Costantini [2]; Stefan Hofmann [3]

[1] *University of Bologna*

[2] *Università degli Studi di Milano-Bicocca*

[3] *Philipps-Universität Marburg*

Corresponding Author: giovanbatti.andreol2@unibo.it

Fully idiographic network analysis (FINA) is a network analysis approach that allows the examination of within-person processes by assessing dynamic relationships between symptoms and symptom progression within individuals over time. FINA has shown promising results as an analytical tool to better describe psychopathology in an idiographic way across a wide array of disorders. Nevertheless, more evidence is needed to support its clinical validity (i.e., how well it aligns with clinicians'judgments) and utility (i.e., its applicability across different populations and contexts, acceptability, ease of use, and cost-effectiveness). To fill this gap, we recruited dyads of clinicians and patients. We tested FINA's clinical validity by comparing the clinician's anticipated psychological network for their patient with the empirical network generated from the patient's data using FINA in their ability to predict the patient's subsequent functioning. Data from the patient were collected via two waves of Ecological Momentary Assessment. To test clinical utility, we employed ad-hoc questionnaires assessing clinicians'and patients'perceptions of FINA's applicability, acceptability, ease of use, and cost. We will present preliminary findings, and discuss the strengths and limitations of FINA in clinical practice.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Applications of Psychometric Network Analysis in Psychology

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 48

Otto studiosi della memoria alle prese con lo studio della propria memoria autobiografica

Author: Igor Sotgiu[1]

[1] *Università degli Studi di Bergamo*

Corresponding Author: igor.sotgiu@unibg.it

Il presente contributo intende offrire una valutazione critica delle ricerche condotte da otto eminenti studiosi della memoria che hanno indagato empiricamente il funzionamento della propria memoria autobiografica: Francis Galton (1822-1911), Madorah Smith (1887-1965), Alan Baddeley (1934-), Richard White (1935-), Marigold Linton (1936-), Willem Wagenaar (1941-2011), Steen Larsen (1944-1999) e Dorthe Berntsen (1962-). Considerati nel loro insieme, questi otto studiosi hanno valutato la capacità di ricordare il proprio passato personale servendosi di un'ampia gamma di procedure: dai compiti di rievocazione guidata da stimoli verbali, comunemente usati negli studi di laboratorio sulla memoria autobiografica, ai compiti di rievocazione libera e i diari di episodi personali, che sono invece metodologie più tipiche della tradizione di ricerca sul campo. Nel corso della presentazione congressuale verrà sottolineato come il rigore e l'estensione temporale delle indagini al centro del presente lavoro abbiano permesso di acquisire delle conoscenze rilevanti, e probabilmente uniche, su alcuni dei principali argomenti che animano il dibattito contemporaneo sulla memoria autobiografica. Tra questi figurano l'oblio, l'accuratezza e la fenomenologia dei ricordi personali, l' organizzazione della memoria autobiografica e i suoi contenuti. Verranno discussi infine i limiti, i punti di forza e le prospettive future delle ricerche che si basano su un'auto-analisi della memoria autobiografica.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Differenze individuali e culturali nella memoria autobiografica: nuove prospettive sperimentali e neuroscientifiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 150

Effects of rhythm on attention at birth

Author: Martina Arioli[1]

Co-authors: Alessandra Consales [2]; Lorella Giannì [2]; Melissa Savoldi [1]; Valentina Silvestri [1]; Viola Marina Macchi Cassia [1]

[1] *Università degli Studi di Milano-Bicocca*

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Rhythm perception and production start very early in human ontogeny as already the foetus can appreciate rhythmic patterns (e.g., maternal movements) and produce rhythmic behaviours (e.g., Non-Nutritive Sucking, NNS). This early sensitivity to rhythm is thought to be crucial for later development of various cognitive functions, including language, but the link to attention is unclear.

Here, we investigated the impact of rhythm and prenatal rhythmic stimulation on postnatal attention skills. To this end, from 29 weeks pregnant, two groups of women were enrolled in either a rhythmic (G1) or non-rhythmic (G0) stimulation protocol. Postnatal attention skills were tested at birth and 2 months. At birth we measured NNS rate in response to rhythmic vs non-rhythmic sounds, and how quickly newborns shifted their gaze in an overlap task involving a rhythmic, non-rhythmic or static central cue and a static peripheral target. This latter task was administered also at 2-months to test the long-term effects of the prenatal stimulation.
Results showed that newborns'NNS was faster while listening to rhythmic vs. non-rhythmic sounds, and, in G1, this effect increased as a function of the amount of prenatal stimulation ($p < .01$). At 2 months, all infants disengaged attention faster from the rhythmic vs. non-rhythmic S1 ($p < .001$), but only newborns in G1 showed this same effect at birth ($p = .02$). This research provides the first demonstration that prenatal rhythmic stimulation improves postnatal attention abilities, adding to earlier evidence of developmental continuity across the perinatal period.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The Beat and Beyond: Unveiling the Roots, Development, and Applications of Human Musical Rhythm.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 391

INTERVENTI ESPLICITI E IMPLICITI PER PROMUOVERE LA CONOSCENZA E IL CONSUMO DI PRODOTTI STAGIONALI: IL RUOLO DELLO STILE DECISIONALE

Author: Giulia Scaglioni[1]

Co-authors: Nicoletta Cavazza [1]; Margherita Guidetti [1]

[1] *Università di Modena e Reggio Emilia*

Corresponding Author: giulia.scaglioni@unimore.it

Introduzione. L'educazione alimentare è un fattore chiave nel promuovere il consumo di frutta e verdura di stagione. Tuttavia, spesso non abbiamo tempo e risorse cognitive per scelte alimentari oculate e questo potrebbe rendere meno efficaci gli interventi basati sulle informazioni.

Obiettivi. Il presente studio sperimentale (preregistrato) intendeva testare l'effetto combinato delle informazioni esplicite e dell'apprendimento associativo sulla conoscenza dei prodotti stagionali e sulla scelta simulata in condizioni di pressione temporale o di controllo, considerando anche le differenze individuali nello stile decisionale (preference for intuition and deliberation).

Metodo. I/le partecipanti (229 adulti, reclutati su Prolific), sono stati assegnati in modo casuale a una delle 8 condizioni di un disegno fattoriale 2 (informazioni esplicite vs controllo) x 2 (apprendimento associativo prodotti/stagioni vs controllo) x 2 (pressione temporale vs controllo). Lo studio, parte del progetto PRIN PNRR 2022 DEMETRA ↔ ARTEMED, è stato svolto in conformità ai contenuti del Codice Etico dell'AIP.

Risultati. Informazioni esplicite e apprendimento associativo migliorano la conoscenza della stagionalità. Sulla scelta simulata, nella condizione di pressione temporale, la scelta di prodotti stagionali aumenta se sono presenti entrambi gli interventi. Tuttavia, questi risultano poco efficaci per i partecipanti che hanno uno stile decisionale più intuitivo. Non emergono interazioni con lo stile deliberativo.

Conclusioni. Per favorire la conoscenza e il consumo di frutta e verdura di stagione può essere utile sia fornire informazioni sia stimolare la formazione di associazioni automatiche tramite tecniche di gamification. Tuttavia, resta da chiarire come favorire questo comportamento tra le persone con uno stile decisionale più intuitivo.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Le differenze individuali nella ricerca sperimentale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / **80**

Mapping Selective Gray Matter Variations in Autism Spectrum Disorder via Bayes fACtor mOdeliNg

Author: Donato Liloia[1]

Co-authors: Franco Cauda [1]; Lucina Q. Uddin [2]; Jordi Manuello [1]; Lorenzo Mancuso [1]; Roberto Keller [3]; Andrea Nani [1]; Tommaso Costa [1]

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[2] *Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles, Los Angeles, California*

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Corresponding Author: donato.liloia@unito.it

Structural magnetic resonance imaging techniques such as voxel-based morphometry (VBM) have identified heterogeneous gray matter variations in individuals diagnosed with autism spectrum disorder (ASD) compared to typically developing controls. However, it remains unclear whether and to what extent disorder-selective brain variations occur in this spectrum. This research gap, along with the observation that other clear-cut clinical conditions exhibit similar neuroanatomical features, poses a significant challenge in translating neuroimaging findings to clinical practice. In our study, we adopted a novel meta-analytic reverse inference approach (i.e., Bayes fACtor mOdeliNg) to assess the presence of selective neuroanatomical patterns associated with ASD. We analyzed VBM data from the BrainMap and MEDLINE databases, encompassing 849 published experiments. These experiments covered 132 psychiatric and neurological disorders, involving more than 40,000 subjects and 16,572 recorded foci of gray matter variation. Our analysis identified specific clusters of variation in the parietal, occipital, and cerebellar areas, showing a selectivity value of 90% or higher in ASD. These findings not only enhance our understanding of ASD pathophysiology but also highlight potential targets for future neuroimaging-based interventions in clinical settings.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Psychophysiological Markers in Autism Spectrum Disorder: Current Evidence and Clinical Perspectives

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / **82**

Il contributo dei segnali interocettivi tattili alla percezione corporea

Author: Laura Crucianelli[1]

Co-author: Henrik Ehrsson [2]

[1] *Queen Mary University of London*

[2] *Karolinska Institutet, Stockholm*

Corresponding Author: l.crucianelli@qmul.ac.uk

Il tatto svolge un ruolo vitale nello sviluppo sociale ed individuale, e nel mantenimento del benessere psicologico negli esseri umani. Studi recenti hanno mostrato che gli aspetti affettivi del contatto tattile interpersonale sono elaborati da un sistema neurofisiologico specializzato di fibre afferenti CT, che proietta alla corteccia insulare, una regione cerebrale centrale per la consapevolezza corporea e la regolazione omeostatica. È stato quindi proposto che alcuni segnali tattili affettivi e termici possano essere ridefiniti come interocettivi poiché forniscono informazioni sullo stato fisiologico del corpo. In questo intervento presenterò una serie di studi comportamentali che hanno investigato la rappresentazione del corpo utilizzando la Rubber Hand Illusion, una robusta illusione corporea che ci permette di manipolare il senso di appartenenza corporea. In particolare, discuterò il contributo di segnali interocettivi (cioè, di informazioni sulla condizione fisiologica del corpo, come il tocco affettivo e la stimolazione termica) e di segnali esterocettivi (cioè, di indizi visivi) sulla percezione di una parte del corpo come appartenente a noi stessi. I nostri risultati mostrano che non solo la congruenza spaziale e temporale, ma anche l'enterocezione potrebbero essere necessarie affinché si verifichi la Rubber Hand Illusion. I segnali interocettivi mediati dalla pelle contribuiscono quindi allo sviluppo del senso di appartenenza del nostro corpo. Tali studi possono potenzialmente fornire una conferma empirica all'idea che il nostro senso del sé sia costruito su interazioni empatiche ed incarnate con gli altri tramite processi di integrazione multisensoriale.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Ci siamo (di nuovo) dimenticati del corpo? Riscoprire l'interazione mente-corpo per comprendere i processi cognitivi ed emotivi

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 157

Divergent Network Trajectories in MCI: Converters vs. Non-Converters to Alzheimer's Disease

Author: Giorgia Tosi[1]

[1] *University of Milan-Bicocca*

Corresponding Author: giorgia.tosi@unimib.it

Mild Cognitive Impairment (MCI) consists of a cognitive impairment that does not affect a person's activities of daily living and progresses to dementia at a rate of approximately 12% per year. In cross-sectional studies, the complexity of the cognitive organisation was explored using Network Analysis to evaluate the relationships between cognitive functions. The present study aims to investigate the longitudinal changes in the relationships between cognitive functions.
From the ADNI database, we extracted three cognitive evaluations of two groups of MCI patients who will convert to Alzheimer's Disease (convMCI; N=128) or not (stabMCI; N=390) and cognitive performances before and after the conversion to AD (MCI/AD; N=203). We used cross-lagged panel

network (CLPN) models to investigate the relationship between cognitive performance on different measurement occasions. We assessed node-wise prediction stability via bootstrap (500 samples).
The stabMCI group showed a higher density of connections in the first year (0.322) than in the second year (0.198). In the first year, memory performance predicted almost all other cognitive tests. On the contrary, the convMCI group showed a lower density of connections in the first year (0.165) than in the second year (0.248), when memory performance and executive functions showed predictive power. Predictions were less stable in the convMCI than in the stabMCI group. The MCI/AD group showed sparse connections (density=0.215), with the Trial Making Test and the Boston Naming Test showing higher predictions than the other variables.
These results show different predictive patterns depending on the future evolution of cognitive impairment.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Applications of Psychometric Network Analysis in Psychology

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 330

Differenze Individuali e Legittimazione dell'Autorità Illegale: il Ruolo dell'Identità e dei Valori Culturali nella Governance Criminale

Authors: Isabella Giammusso[1]; Giovanni A. Travaglino[2]; Alberto Mirisola[3]

[1] *Department of Psychology, Educational Science and Human Movement - University of Palermo*

[2] *Institute for the Study of Power, Crime, and Society, Dpt. of Law & Criminology School of Law & Social Sciences Royal Holloway, University of London*

[3] *Department of Psychology, Educational Science and Human Movement - University of Palermo*

Corresponding Author: isabella.giammusso@unipa.it

Nel presente contributo, abbiamo esaminato in che modo la relazione tra l'adesione a certi valori culturali, quali quelli legati all'onore mascolino, e la giustificazione della connivenza con la criminalità organizzata sia influenzata dalla salienza dell'identificazione sociale. Comprendere questi meccanismi è importante per comprendere come i gruppi criminali organizzati stabiliscono funzioni di governance nella società contemporanea.
A 390 partecipanti siciliani è stata è stata manipolata la salienza dell'identità sociale (nazionale, locale o individuale) e sono stati misurati i loro livelli di onore mascolino e di giustificazione della connivenza con la criminalità organizzata. I risultati hanno evidenziato come la relazione tra l'adesione ai valori dell'onore mascolino e la giustificazione delle norme di connivenza sia risultata più debole quando è stata resa saliente l'identità nazionale, mentre è risultata più forte quando è stata resa saliente quella locale. Questi risultati offrono importanti spunti per la comprensione dei processi di legittimazione delle autorità illegali, evidenziando come alcuni gruppi criminali utilizzino valori ritenuti importanti in un contesto per ottenere consenso, e come tale consenso dipenda dall'interazione tra l'identità sociale e l'adesione a quei particolari valori.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Le differenze individuali nella ricerca sperimentale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 122

The Sweet Spot of Rhythm: How Rhythm Complexity and Individual Sensitivity to Musical Reward Shape Rhythmic Skills and Interpersonal Synchronization

Author: Carlotta Lega[1]

[1] *University of Pavia*

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Rhythm naturally emerges in humans from infancy and significantly impacts various cognitive functions (e.g., memory, attention) and emotional processes (e.g., emotions, sense of connection). Moreover, it is thought to modulate music reward responses through its strong movement-inducing component. Consistent evidence has highlighted the pivotal role of rhythm complexity in eliciting pleasurable responses to music, with medium complexity rhythms eliciting the highest levels of pleasure and wanting to move. Additionally, we know that there are individual differences in how people experience reward in music-related activities (musical hedonia). This research explores the combined effects of interindividual differences in music reward responses and rhythm complexity on rhythmic skills. In different experiments, we demonstrated a strong link between musical hedonia and rhythmic ability, suggesting that participants with higher music reward are more sensitive in the performance of rhythm production and rhythm perception tasks. Furthermore, the study establishes a novel link between rhythm complexity and rhythm perception skills: participants perceived tracks with medium complexity as more rhythmically aligned than those with low or high complexity. This suggests that music's inherent structure interacts with individual reward preferences to influence perception. Finally, the research extends to social interaction by demonstrating that musical hedonia affects not only individual rhythmic skills but also the ability to synchronize motor movements with others. Together these results highlight the role of both intrinsic properties of stimuli (rhythm complexity) and individual reward sensitivity to music in shaping not only individual rhythmic skills but also our ability to temporally coordinate actions with others.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

The Beat and Beyond: Unveiling the Roots, Development, and Applications of Human Musical Rhythm

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 120

Recupero di ricordi autobiografici episodici vs ipergenerici: Paesi Mediterranei ed Emirati Arabi Uniti a confronto

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Co-authors: Alessandra Zagato ; Dimitrios Gkinis ; Christin Camia [2]

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Il recupero di ricordi autobiografici è influenzato da variabili individuali e culturali. Ad esempio, diverse strategie di regolazione emozionale si traducono nella qualità e quantità di elementi recuperati dalla propria memoria; tali contenuti possono essere specifici e dettagliati, oppure più generali (detailed vs. overgeneral memories). Fornire narrazioni generali e astratte funge da strategia di evitamento per regolare emozioni spiacevoli. Alcune ricerche mostrano una tendenza dei Paesi Orientali (Cina) ad avere ricordi ipergenerici, al contrario dei Paesi Occidentali (Stati Uniti, Nord Europa), che mostrano ricordi episodici dettagliati, in linea con la dicotomia collettivismo-individualismo. Studi recenti mettono in discussione questa dicotomia, con il peculiare caso degli Emirati Arabi Uniti (UAE), che sembrerebbero avere valori individualisti lungo un continuum. Il presente lavoro, attraverso uno studio di narrazioni autobiografiche tramite word-cue retrieval, esplora le differenze culturali tra Paesi Mediterranei (Italia e Grecia) e UAE; in aggiunta alla richiesta di fornire 10 ricordi autobiografici (valutandone la valenza emozionale al momento della codifica dell'evento e al momento del recupero attuale), i partecipanti hanno compilato diversi questionari per valutare le differenze individuali circa la memoria autobiografica (ART –Autobiographical Recollection test), il proprio stato affettivo (PANAS; Self-Assessment Manikin pre- post- interviste) e la tendenza ad essere collettivisti vs individualisti (Symbolic self-inflation test). Viene confermata la differenza tra Paesi Mediterranei e UAE nel recupero di ricordi autobiografici, tuttavia la tendenza ad avere ricordi episodici dettagliati piuttosto che ipergenerici dipende in modo particolare dalle differenze individuali nelle strategie di regolazione affettiva. Viene discussa l'interazione tra variabili individuali e culturali.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Differenze individuali e culturali nella memoria autobiografica: Nuove prospettive sperimentali e neuroscientifiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 33

Il contributo dei segnali interocettivi alla costruzione della consapevolezza corporea in donne sane e con dolore cronico

Authors: Chiara Cantoni[1]; Andrea Salaris[2]; Sofia Ciccarone[1]; Alessandro Monti[1]; Giuseppina Porciello[3]; Salvatore Maria Aglioti[1]

[1] *Università di Roma "La Sapienza"*

[2] *Università degli studi di Roma La Sapienza*

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Sebbene i segnali corporei siano essenziali per mantenere l'omeostasi, attuali modelli teorici ed evidenze empiriche suggeriscono che essi influenzano anche processi emotivi e cognitivi di più alto livello. Tra questi, la consapevolezza corporea, ossia la sensazione di avere un corpo, che occupa una specifica posizione nello spazio e agisce secondo la propria volontà, deriva dalla costante integrazione di segnali interocettivi (es. cardiaci, respiratori, gastrointestinali, vescicali) ed esterocettivi (es. visivi, tattili, uditivi). In particolare, i segnali interocettivi, svolgono un ruolo cruciale nel plasmare la nostra
percezione dell39;intero corpo e nel modo in cui interpretiamo specifiche sensazioni corporee, attribuendo loro proprietà sensoriali ed emozionali, come nel caso del dolore.

In questo contesto, abbiamo esplorato il ruolo dei segnali interocettivi nell39;influenzare la consapevolezza corporea in un campione di donne sane e affette da dolore cronico (endometriosi). Nel primo studio abbiamo indagato il ruolo del respiro nell'influenzare la consapevolezza corporea in donne sane, attraverso l39;illusione di "Embreathment", un paradigma di 'embodiment'in realtà virtuale. Nel secondo abbiamo esplorato la percezione di diversi segnali interocettivi (cardiaci, gastrici e per la prima volta urinari) in donne che soffrono di endometriosi, e il loro impatto sulla percezione di dolore cronico solitamente indagato attraverso questionari self-report.
I risultati dei due studi hanno evidenziato rispettivamente l'importanza dei segnali respiratori nella percezione del senso di ownership ed agency in donne sane e l'alterazione dei segnali interocettivi gastrici ed urinari nelle donne con endometriosi (vs. donne sane), alterazione che in parte si associa alla percezione di dolore cronico caratterizzante la patologia.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Ci siamo (di nuovo) dimenticati del corpo? Riscoprire l'interazione mente-corpo per comprendere i processi cognitivi ed emotivi

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 98

Parsing autism heterogeneity by non-core features: developmental and neurobiological implications

Authors: Veronica Mandelli[1]; Ines Severino[2]; Lisa Eyler[3]; Karen Pierce[4]; Eric Courchesne[4]; Michael V. Lombardo[1]

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The current diagnostic criteria for autism spectrum disorder (ASD) focus on the characteristics individuals share in terms of social-communicative difficulties and the presence of restricted and repetitive behaviors. However, phenotypic heterogeneity in non-core features, such as early language, intellectual, motor, and adaptive functioning (LIMA), is among the most prominent aspects that distinguish different functional types of autistic individuals. Furthermore, heterogeneity in LIMA features may be crucial in explaining the variability we observed in biology, outcomes, and treatment responses. In this work, we parsed autism heterogeneity using non-core LIMA features to aid in distinguishing types of autisms characterized by peculiar developmental trajectories, and distinct underlying biology. Applying stability-based relative cluster validation analysis to a large (n=615) publicly available dataset of clinical tests measuring LIMA features in young autistic children (24-68 months), we can identify two robust and replicable clusters with high generalization accuracy (98%). These clusters identify two subtypes of autism (e.g., type I vs type II) with opposite functional profiles defined by relatively high versus low LIMA feature scores. Furthermore, the subtypes exhibit different developmental trajectories throughout the early years of life, and they are sensitive to significant differences in functional and structural neuroimaging phenotypes and their relationships with gene expression. Finally, to promote future applications of our stratification model in research settings, we implemented a free online tool to help distinguish autism type I from autism type II.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Psychophysiological Markers in Autism Spectrum Disorder: Current Evidence and Clinical Perspectives

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia / 364

TAILORIZZARE LA DESCRIZIONE DI UN'APP CHE INCENTIVI L'ADOZIONE DI DIETE SALUTARI E SOSTENIBILI: IL RUOLO DEL FOCUS REGOLATORIO

Authors: Valentina Carfora[1]; Simone Festa[1]; Sara Pompili[1]; Italo Azzena[1]; Andrea Scatolon[2]; Michela Lenzi[2]; Luciana Carraro[2]; Patrizia Catellani[3]

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[2] *Università di Padova*

[3] *Università Cattolica del Sacro Cuore di Milano*

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Introduzione: Per incoraggiare l'Adozione di Diete Sane e Sostenibili (ADSS), le tecnologie digitali potrebbero essere un utile strumento.
Obiettivi: Nel presente studio, abbiamo testato l'efficacia di cinque comunicazioni che incentivano il download di un'app che promuove l'ADSS. Inoltre, abbiamo verificato se il focus regolatorio modera la persuasività della comunicazione utilizzata.
Metodo: Lo studio, parte del progetto PRIN PNRR 2022 DEMETRA<->ARTEMED, è stato svolto in conformità ai contenuti del Codice Etico approvato dall'Assemblea Generale dei Soci AIP. All'inizio del questionario, abbiamo misurato il focus regolatorio dei partecipanti (N = 401), per poi esporli a una di cinque condizioni: *description* (descrizione dell'app); *growth + positive emotion* (description + informazione su benessere e soddisfazione emotiva derivanti dall'utilizzo dell'app); *growth + negative emotion* (description + informazione su benessere e insoddisfazione emotiva derivante dal non utilizzo); *security + positive emotion* (description + informazione su salute e soddisfazione emotiva derivanti dall'utilizzo); *security + negative emotion* (description + informazione su salute e insoddisfazione emotiva derivante dal non utilizzo). Poi, abbiamo misurato il desiderio e il comportamento di download dei partecipanti.
Risultati: Le persone con un basso focus di promozione desiderano maggiormente utilizzare l'app quando leggono il messaggio *description*, rispetto a quando leggono il messaggio *security + negative emotion*. Le persone con un basso focus di prevenzione scaricano maggiormente l'app quando leggono il messaggio *description*, rispetto a quando sono leggono il messaggio *security + positive emotion*.
Conclusioni: Le persone sono più disposte ad utilizzare l'app quando la comunicazione non confligge con il loro focus regolatorio.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Le differenze individuali nella ricerca sperimentale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 162

Examining the Distinctiveness of Orthorexia Nervosa: Insights from a Psychometric Network Analysis

Authors: Andrea Zagaria[1]; Silvia Cerolini[1]; Mariacarolina Vacca[None]; Caterina Lombardo[1]

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Corresponding Author: andrea.zagaria@uniroma1.it

Introduction: Orthorexia Nervosa (ON) is a proposed clinical condition characterised by a pathological obsession with healthy eating. Despite ongoing research, it has yet to be clarified whether ON could be considered a part of Feeding and Eating Disorders (FED) or a manifestation of obsessive-compulsive disorder (OCD), and whether it warrants recognition as a unique diagnostic entity. To shed light on this matter, a psychometric network analysis was conducted by considering these three clusters of symptoms. **Methods:** A total of 422 participants (Mage=20.70, SD=3.44; 71.8% women) completed self-report questionnaires, including the Eating Attitudes Test-26, the Disordered Eating Questionnaire, the Düsseldorf Orthorexia Scale, the ORTO-15, and the Obsessive-Compulsive Inventory-Revised. **Results:** Findings revealed that ON, FED, and OCD emerged as relatively distinct communities within the network structure. Importantly, ON was more closely related to the cluster of FED. Specifically, an examination of edge weights and centrality metrics highlighted shared characteristics between FED and ON, such as the economic and emotional consequences due to strict adherence to healthy dietary rules. Additionally, inter-cluster edges were observed for guilt following eating, purging behaviours, and food-related worry, which bridged the theoretically defined communities of FED and ON. Conversely, excessive washing due to feeling contaminated played a pivotal role in linking OCD with ON. **Conclusions:** Our findings support ON as distinct from both OCD and FED, yet closely related to the latter. The stronger interrelationships observed between FED and ON might suggest considering obsessive fixation with healthy eating as a distinct entity within the spectrum of eating disorders.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Applications of Psychometric Network Analysis in Psychology

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No

Symposia / 45

Il Reminiscence Bump e il Sé: Cinque studi sui ricordi autobiografici positivi e negativi

Author: Antonietta Curci[1]

Co-authors: Fabiana Battista [2]; Tiziana Lanciano [1]

[1] *Università degli Studi di Bari Aldo Moro*

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Corresponding Author: antonietta.curci@uniba.it

Numerosi studi hanno dimostrato che le persone ricordano persistentemente sia eventi pubblici che privati vissuti durante l'adolescenza e la prima età adulta, in particolare eventi con contenuto emotivo positivo. Attraverso 5 studi, il presente lavoro indaga il Reminiscence Bump (RB) per ricordi di eventi pubblici positivi e negativi (studi 1 e 2), di eventi privati (studio 3), di eventi collegati ad

esperienze musicali (studio 4) e di eventi cross-culturali (es. Cina e Stati Uniti) (studio 5). Ai partecipanti è stato chiesto di recuperare un ricordo positivo o un ricordo negativo, di indicare la loro età al momento dell'evento (Età di Codifica) e di fornire misure secondarie come la vividezza e la reiterazione dell'evento (studi 1 e 3), e l'intensità emotiva esperita (studi 2 e 4). In totale, sono stati raccolti circa 10.000 ricordi. I risultati mostrano che i ricordi positivi sono apparsi generalmente più vecchi temporalmente di quelli negativi, ma il RB è emerso sia per i ricordi positivi che per quelli negativi. Inoltre, il picco di RB per i ricordi di eventi pubblici positivi (< 15 anni) è precedente rispetto al picco per i ricordi di eventi pubblici negativi (20-40 anni), mentre nessuna differenza è stata riscontrata per i ricordi di eventi privati o di esperienze musicali (15-25 anni). I Cinesi hanno mostrato un picco RB più tardivo rispetto a quello degli Americani. I risultati supportano il ruolo della memoria autobiografica nella costruzione e nello sviluppo del Sé e dell'identità.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Differenze individuali e culturali nella memoria autobiografica: Nuove prospettive sperimentali e neuroscientifiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 127

Effects of a rhythm-based intervention for reading in dyslexia: Comparing in presence and tele-rehabilitation settings

Authors: Alice Cancer[1]; Daniela Sarti[2]; Marinella De Salvatore[2]; Elisa Granocchio[2]; Alessandro Antonietti[3]

[1] *Dipartimento di Psicologia, Università Cattolica del Sacro Cuore di Milano*

[2] *UOC Neurologia dello Sviluppo, Fondazione IRCCS Istituto Neurologico Carlo Besta*

[3] *Università Cattolica del Sacro Cuore*

Corresponding Author: alice.cancer@unicatt.it

Based on the transfer effects of music training on the phonological and reading abilities of children with dyslexia, a computerized rhythmic intervention—the Rhythmic Reading Training (RRT)—was developed, in which reading exercises are combined with a rhythmic synchronization task. This rehabilitation program was previously tested in multiple controlled clinical trials, which confirmed its effectiveness in improving reading in children and adolescents with dyslexia. Given the advantage of telerehabilitation methods for dyslexia during the COVID-19 pandemic, clinical research was needed to test the effectiveness of tele-training approaches by comparing their outcomes with those of face-to-face interventions. To compare the effectiveness of telerehabilitation vs. in-presence rehabilitation of dyslexia, RRT was tested on a sample of 36 children aged 8–13 with a diagnosis of developmental dyslexia. Participants were assigned to either a telerehabilitation (n = 18) or an in-presence (n = 18) rehabilitation setting and received RRT for 10 biweekly sessions of 45 min, supervised by a trained practitioner. The results showed that both telerehabilitation and in-presence rehabilitation were effective in improving reading and rapid automatized naming in children with dyslexia and that the effects were comparable between settings. Such results demonstrated that RRT is effective despite the administration method (remote or in-presence), thus adding evidence of its potential as a rehabilitation method for dyslexia.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

The Beat and Beyond: Unveiling the Roots, Development, and Applications of Human Musical Rhythm

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 449

Similarities Between Categories Are Much Larger Than Their Differences: A Cautionary Note for Interpreting Individual Differences

Author: Gregory R. Maio[1]

Co-author: Cristina Zogmeister

[1] *University of Bath*

Given the enormous amount of discourse in popular media and in research around gender differences, a person could be excused for believing the cliché that men are from Mars and women are from Venus. Many other categorial individual differences, such as ethnicity, nationality, and religion, are met with similar beliefs about the enormity of differences. In this presentation, I will show the dangers of an approach to research that focuses on individual differences to the expense of noting similarities. To illustrate the importance of acknowledging similarities in addition to differences, the presentation will focus on data regarding between-category similarities and differences in human values. Around the world, people talk about the importance of their values –ideals such as equality, freedom, helpfulness, or the environment. People use these abstract ideals to justify their attitudes and actions, and to praise or condemn others. It is frequently assumed that values differ substantially between people, with differences between numerous social categories, such as culture, gender, nationality, political views, religiosity, and social class. This presentation highlights evidence that the reality is very different. International data show strong similarities in values between diverse groups. The research not only demonstrates high similarity, but also shows that introducing people to this similarity increases outgroup positivity and optimism about solving societal challenges, while having the potential to increase intellectual humility in debate.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Le differenze individuali nella ricerca sperimentale

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia / 160

Interazione cervello-cuore, autoregolazione e rischio depressivo

Author: Francesca Mura[1]

Co-authors: Vincenzo Catrambone [2]; Gaetano Valenza [2]; Claudio Gentili [1]; Elisabetta Patron [1]

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Corresponding Author: francesca.mura.1@phd.unipd.it

La complessa comunicazione tra cervello e cuore esercita un'influenza sostanziale sul comportamento umano. Le interruzioni di questo dialogo possono compromettere le capacità di autoregolazione ed esacerbare i sintomi di disturbi mentali quali depressione e ansia. L'interazione cervello cuore (Brain-Heart Interplay, BHI) costituisce una misura completa che cattura l'interazione tra il sistema nervoso autonomo cardiaco (misurato tramite elettrocardiografia [ECG]) e il sistema nervoso centrale (misurato tramite elettroencefalografia [EEG]), offrendo nuove prospettive sui meccanismi psicofisiologici sottostanti alla relazione tra autoregolazione e disturbi dell'umore. La ricerca che indaga la BHI tra individui con sintomi depressivi in varie condizioni (a riposo o durante compiti emotivi) supporta la presenza di interazioni cardiache-corticali alterate. Inoltre, i risultati di uno studio pilota suggeriscono modelli distinti nell'interazione cervello-cuore durante compiti di autoregolazione con o senza feedback esterno (biofeedback). In particolare, l'autoregolazione senza feedback esterno implica una maggiore domanda cognitiva poiché gli individui dipendono maggiormente da strategie cognitive per modulare la loro attivazione fisiologica cardiaca (specificamente, la loro frequenza cardiaca), mentre l'uso del feedback esterno riduce sostanzialmente il carico cognitivo offrendo una guida esterna e informazioni più precise sui propri segnali fisiologici. Questi risultati forniscono supporto empirico per l'utilità degli indici BHI, sia per quanto riguarda l'indagine dei meccanismi psicofisiologici alla base dei processi di autoregolazione e del rischio di condizioni psicopatologiche, sia per la letteratura sulle basi teoriche degli interventi di biofeedback, supportandone il potenziale come strumenti terapeutici per i disturbi dell'umore ed il benessere emotivo.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Ci siamo (di nuovo) dimenticati del corpo? Riscoprire l'interazione mente-corpo per comprendere i processi cognitivi ed emotivi

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 123

Multivariate pattern analysis of EEG data reveals prolonged encoding of visual information in autism

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Autism spectrum disorder (ASD) is linked to a hyper-focused visuo-attentional style, impacting higher-order affective and social domains. To disentangle the neurocognitive signatures underlying such attentional anomalies, we recorded EEG in typically developing children (TD; N=20) and in children with ASD (N=19) during a visuo-spatial attentional task where attention was exogenously captured by a large (zoom-out) or small (zoom-in) circular cue in the visual field before the onset of a target at different eccentricities. We performed Multivariate Pattern Analysis (MVPA) of EEG data during both the cue-locked time window, aiming to unveil the spatio-temporal neural dynamics involved in scaling the visuo-attentional focus, and during the target-locked period, aiming to uncover potential repercussions on stimulus processing. Cue-locked MVPA unveiled that, differently from TD individuals, the ASD group showed a temporally sustained and spatially diffuse significant decoding of the cue neural response even after the target onset, suggesting a delayed extinction of cue-related neural activity. Crucially, this delayed extinction of the cue-neural response predicted an aberrant hyperfocusing of visual attention at the behavioural level. Target-locked MVPA results highlighted a hyper-focused attentional profile in ASD individuals, revealing an earlier and stronger

processing of target neural responses in zoom-in trials. These findings provide evidence for a temporally and topographically overrepresented processing of visual input in ASD individuals, which can constitute one of the main factors contributing to their unique neurocognitive profile.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Psychophysiological Markers in Autism Spectrum Disorder: Current Evidence and Clinical Perspectives

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Yes

Symposia / 107

Many Countries, One Flourishing Network? Exploring the Psychometric Network of Flourishing Across 22 Countries

Authors: Michela Zambelli[1]; Dwight C. K. Tse[2]; Richard G. Cowden[3]; Jan Höltge[4]; Tyler J. VanderWeele[3]

[1] *Università Cattolica del Sacro Cuore*

[2] *University of Strathclyde, Glasgow, Scotland, UK*

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Flourishing indicates the extent to which all aspects of a person's life, including the context in which they live, are considered good. As a multi-dimensional construct, recent work has begun to explore the interrelatedness among flourishing constituents and their contribution to the achievement and maintaining of individual well-being. Using the national representative survey data from the first wave of the Global Flourishing Study (total N = 202,898 from 22 countries; Crabtree et al., 2021), a Meta-Analytic Gaussian Graphical Network (MAGNA) was applied using psychonetrics (Epskamp et al., 2022) to investigate similarity and differences among the reciprocal interrelation of flourishing components across countries. Flourishing was assessed with the twelve self-report items composing the Secure Flourishing Measure (VanderWeele, 2017). A random-effect MAGNA model was estimated to obtain a common cross-country network of flourishing, and a variance-covariance matrix of random effects that quantifies the heterogeneity of edges across countries. Results revealed: (a) consistent heterogeneity in the strength of associations between flourishing components, especially in the interrelations between life satisfaction, happiness and mental health; (b) the common-country flourishing network was characterized by positive interrelations between the flourishing components, with financial and material stability assuming a marginal involvement in the network; (c) "life-satisfaction"and "happiness"emerged as the most central constituents of flourishing with the strongest overall positive influence and predictability with the nodes to which they were connected. Understanding cross-country differences in light of socio-contextual peculiarities will be crucial for informing the development of targeted flourishing interventions.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Applications of Psychometric Network Analysis in Psychology

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 236

Differenze di connettività funzionale tra individui ipermemori e con memoria normotipica

Author: Valerio Santangelo[1]

[1] *Università di Perugia*

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Il funzionamento della memoria umana è stato classicamente studiato in individui con prestazioni normotipiche o in pazienti con deficit di memoria. La scoperta di individui con capacità di memoria aumentata, la cosiddetta ipermemoria autobiografica (*Highly Superior Autobiographical Memory*, HSAM), offre l'opportunità di indagare il funzionamento mnestico da una prospettiva nuova. In questo intervento, passerò in rassegna studi recenti che hanno iniziato a svelare i meccanismi neurobiologici alla base della migliore capacità di recupero delle informazioni autobiografiche in individui con HSAM. Passerò poi a nuove evidenze relative al funzionamento cerebrale negli HSAM in condizione di riposo. In uno studio di neuroimmagini funzionali (*resting-state* fMRI), abbiamo confrontato la connettività funzionale in un gruppo di 12 individui con HSAM vs. un gruppo di 29 controlli. È stata applicata un'analisi della connettività dell'intero cervello per identificare differenze nella topologia di *hub* cerebrali associati alla condizione HSAM. Abbiamo inoltre eseguito un'analisi basata su regioni di interesse, derivate dal *network* autobiografico. Entrambe le analisi hanno mostrato convergenza nel rivelare un aumento di connettività negli HSAM a carico delle cortecce della linea mediana, i.e., la corteccia prefrontale mediale e la corteccia cingolata posteriore, due nodi fondamentali del *network* di *default*, già precedentemente associato al funzionamento della memoria autobiografica. Nel complesso, questi risultati ampliano le ricerche precedenti, evidenziando come differenze individuali a livello di funzionamento cerebrale tra soggetti con ipermemoria autobiografica e soggetti normoticipi esistano ben aldilà di compiti specifici legati al recupero dalla memoria di informazioni autobiografiche, offrendo nuovi spunti per la comprensione dell'eziologia di tale condizione.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Differenze individuali e culturali nella memoria autobiografica: Nuove prospettive sperimentali e neuroscientifiche

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia / 469

Discussion

Corresponding Author: carlotta.lega@unipv.it

Mini-talks / 42

Susceptibility to distracted driving: the role of personality and individual factors

Author: Luigi Tinella[1]

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The study aimed to investigate associations between the Big Five personality dimensions with the susceptibility of distracted driving (i.e., engagement in voluntary distraction, attitudes toward distraction, and susceptibility to involuntary distraction) comparing samples of Australian and Italian drivers. Distracted driving remains a significant global challenge to road safety, contributing to the occurrence of motor-vehicle crashes with serious consequences on public and environmental health. Despite efforts to explore factors underlying distracted driving, less is known on the role of the driver's personality in affecting the tendency to report distraction. Five hundred and fifty-one participants (55% females) from Australia and Italy completed an online survey including questionnaires on personality and distracted driving. The invariance of the tested model was assessed through a multigroup path analysis considering personality traits as predictors and different facets of the susceptibility to distracted driving as outcomes, in a unique model. The effects of age, gender, and education were also controlled in the analyses. Results showed differences among nationality groups in personality traits as well as in susceptibility to distraction. Findings also suggested positive effects of Neuroticism, Extraversion, and Agreeableness on all dimensions of susceptibility to distracted driving. Conscientiousness was found to affect attitudes toward distraction, perceived control, and perceived social norms. Finally, the tendency to report susceptibility to involuntary distraction was influenced by Openness only. These results provide insights on the usefulness of the assessment of a personality profile to achieve road safety improvements and represent a valuable source of knowledge for the study of individual risk-exposure.

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Attenzione spaziale uditiva e pratica musicale

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La maggior parte degli studi sulla attenzione spaziale uditiva hanno esaminato gli effetti attentivi su stimoli presentati nello spazio anteriore, mentre rimane da stabilire se effetti analoghi possano essere osservati anche nello spazio posteriore.

A questo scopo, abbiamo chiesto ad un gruppo di partecipanti di completare un compito attentivo tipo Posner in cui uno stimolo uditivo veniva presentato da uno di sei altoparlanti, disposti attorno al partecipante a copertura dei 360°. In ogni prova, un cue visivo (freccia) precedeva un target uditivo. Nei 2/3 delle prove, il cue indicava la posizione del target (prove valide), mentre nel restante 1/3 il target era presentato in posizioni inattese (prove invalide), con distanze cue-target variabili. Nel 6,25% delle prove, il cue non era predittivo (prove neutre).
Per stabilire se i benefici della pratica musicale riguardino anche l'attenzione uditiva e la sua distribuzione nello spazio, abbiamo misurato anche la performance di un gruppo di musicisti e confrontata con quella dei controlli.
Entrambi i gruppi mostrano un vantaggio delle prove valide rispetto a quelle invalide con un andamento quadratico del gradiente (rallentamento maggiore per distanze cue-target minori). Cue posteriori portavano a spostamenti attentivi più veloci, soprattutto verso l'emicampo anteriore. I musicisti mostravano maggior velocità e accuratezza in tutte le condizioni, ma soprattutto nelle prove neutre. I risultati, letti in chiave evolutiva, sembrano indicare un disancoraggio più faticoso dal riferimento visivo anteriore. Infine, la pratica musicale sembra portare ad una distribuzione attentiva più omogenea, rapida ed efficace, soprattutto quando è richiesto di coprire l'intera scena uditiva.

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Fostering an Age-Friendly Sustainable Transport System: A Psychological Perspective

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The aging population is rapidly growing across the world, with the number of people aged 65 or older projected to reach 1.6 billion by 2050. As such, it is essential to consider how to develop sustainable transport systems that are age-friendly. This perspective proposal investigates how to foster an age-friendly transport system with a particular focus on public and sustainable transport options for the elderly. Existing transport systems are evaluated to determine their adherence to an effective age-friendly transport system in terms of three main requirements, namely affordability, accessibility, and safety. Then, a psychological perspective is introduced by considering the psycho-physical needs and preferences of the elderly as well as individual factors affecting them. Four areas are considered: (a) independence and autonomy, (b) comfort and convenience, (c) social inclusion and ageism, (d) physical health and well-being, especially injuries due to mobility and fear connected with them. Finally, a proposal is made about psychological training programs directed to both elderly users and transport workers to overcome concerns for an age-friendly transportation system. Such programs

could effectively support the age-friendly use of public transport systems simply by increasing the age-friendly skills of both users as well as transport workers.

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New technologies and assistive robotics for elderly: A review on psychological variables

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Abstract
L'articolo passa in rassegna le recenti ricerche sulle nuove tecnologie di assistenza agli anziani basate sull'intelligenza artificiale: Utilità per case accoglienti e ambienti di vita assistiti, dispositivi indossabili e di monitoraggio, realtà virtuale e aumentata e robotica assistiva.
Questi strumenti tecnologici intelligenti possono ridurre l'isolamento degli anziani assistendoli nelle loro attività quotidiane, ma senza sostituire completamente gli interventi diretti e richiedendo il supporto umano per facilitare l'interazione.
Nel determinare l'efficacia delle tecnologie assistive, la percezione che gli anziani hanno di esse, l'accettabilità e la disponibilità a utilizzarle sono variabili fondamentali. Sono rilevanti anche la percezione da parte dei caregiver e degli operatori sanitari e la dimensione socio-culturale dell'accettabilità.
Infine, il documento presenta le questioni etiche legate all'uso delle tecnologie con la popolazione anziana, per garantire l'autonomia, la sicurezza e la dignità della persona.
In conclusione, vengono evidenziate le sfide per il futuro delle tecnologie assistive, affinché possano essere utilizzate al meglio per assistere popolazioni anziane ampie e differenziate.
Keywords:
Elderly, Intelligent Assistive Technologies, Ambient Assisted Living, Social Assistive Robotics, Acceptability

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The Left-to-Right Valence Mapping affects the Posner Cueing Task: on the independent contribution of reflexive and voluntary mechanisms of covert orienting of attention

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Cue-to-target spatial correspondence in the Posner cueing task is known to facilitate responses under conditions of short asynchrony between a peripheral cue and a target shape. How this benefit is modulated by target properties, such as faces expressing either the most positive or negative emotion in a set, remains an open question. We addressed this issue with the expectation that the spatial mental representation of valence from facial expressions of emotion may influence motor reactivity in a way consistent with a compatibility effect based on the left-to-right valence mapping of emotions. The results align with our expectations. Beyond a global facilitation of cue validity, the spatial correspondence between the target side and its left-to-right valence mapping captured attention, producing a larger left-to-right advantage for the most negative emotional target presented in the task (angry vs. happy face in Experiment 1, neutral vs. happy face in Experiment 2a, angry vs. neutral face in Experiment 2b). This effect can be accounted for by a novel chronometric framework that allows the extraction of the independent contributions of two well-known encapsulated components of involuntary covert orienting of attention from response latencies: an endogenous and an exogenous latency component, the former directed towards the target and the latter towards the cue. The results show that the left-to-right valence mapping impacts only the endogenous latency component. This supports a model of involuntary covert orienting involving strongly overlapping and intertwined reflexive and voluntary orienting mechanisms, with the latter depending on the target's properties.

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The activity is nothing without control. Promoting an active life in aging while safeguarding against potential accident risks.

Authors: Rosa Napoletano[None]; Antonella Lopez[1]; Giuseppina Spano[2]; Luigi Tinella[3]; Sergio Traficante[4]; Elisabetta Ricciardi[5]; Alessandro Oronzo Caffò[6]; Andrea Bosco[7]

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The aging population continues to grow, necessitating increased healthcare, social security, and support. In response, Active Aging (AA) initiatives have been established to foster well-being and successful aging. AA refers to the engagement in physical, mental, and social activities to improve quality of life, independence, and social participation. However, engagement in activities (e.g. walking, driving, and daily life activities) may lead to greater physical risk and injuries (e.g. falls, collisions, burns, and cuts). Considering this, this study aims to explore potential drawbacks of AA engagement in daily activities, aiming to identify variables that could mitigate accidents and enhance safety. Alongside demographic factors (age, gender, education), predictors such as level of AA, exposure, and proneness toward risky behaviors are examined across indoor, outdoor, and driving contexts in 82 healthy older persons. A standard Bayesian multi-model approach was employed to analyze these variables in each context. In outdoor context, results showed the relationship between AA

and proneness to risky behaviors; participants with greater proneness to risky behaviors showed the highest average number of accidents. In indoor context, female participants more exposed to domestic activities showed the highest average number of accidents, while male participants with greater proneness to risky behaviors showed a highest average number of driving accidents. The comprehensive framework resulting from this in-depth investigation identifies differentiated indicators for various contexts, potentially useful for preventing aging-related accidents. In conclusion, to decrease the risks related to engagement in activities, promotion of age-friendly environments could enhance safety and social participation for older people.

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Monitorare i cambiamenti dello sforzo e della sicurezza percepiti in situazioni di ascolto in rumore in giovani e anziani

Author: Chiara Valzolgher[1]

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Saper riportare il disagio provato durante un'esperienza di ascolto rumorosa implica che gli ascoltatori siano in grado di riconoscere le condizioni ambientali avverse e di monitorare i propri stati interni, come lo sforzo percepito e la sicurezza percepita durante l'ascolto. La capacità di monitorare i propri stati interni è stata spesso indagata valutando giudizi retrospettivi, trascurando di misurare le fluttuazioni continue di tali stati che le persone sperimentano durante l'ascolto. In questo studio abbiamo misurato un indice di autovalutazione continuo dei propri stati interni e studiato le differenze legate all'età in questa capacità. Abbiamo istruito un gruppo di giovani e un gruppo di anziani a riferire continuamente la loro sicurezza e il loro sforzo nell'ascoltare delle storie disturbate da un rumore con intensità variabile. Abbiamo dimostrato che sia i giovani che gli anziani erano in grado, in equal modo, di adattare le loro valutazioni di sicurezza e sforzo coerentemente con le variazioni del rumore di fondo. Questo studio contribuisce ad arricchire la definizione di metacognizione e sottolinea il valore di questa capacità per la popolazione anziana, in quanto cruciale per superare le sfide percettive quotidiane.

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Indagare la relazione tra religiosità e allucinazioni uditive non cliniche

Author: Chiara Lucafo'[1]

Co-authors: Irene Ceccato [1]; Gianluca Malatesta [1]; Anita D'Anselmo [1]; Rocco Palumbo [1]; Nicola Mammarella [1]; Alberto Di Domenico [1]; Luca Tommasi [1]; Giulia Prete [1]

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Le allucinazioni uditive (AU: udire voci in assenza di stimolo esterno) sono presenti in molte condizioni psichiatriche, ma sono relativamente frequenti anche nella popolazione sana (4-15%). A differenza delle AU cliniche, nella popolazione sana sono spesso descritte come esperienze a valenza positiva e non intrusive, o come un modo per essere connessi con "qualcun altro". Abbiamo indagato la frequenza e la fenomenologia delle AU non cliniche, e la loro possibile relazione con religiosità, depressione e ansia. I dati raccolti online su circa 700 partecipanti sani di età compresa tra 18 e 40 anni (51% credenti) hanno mostrato che meno del 10% del campione ha dichiarato di non aver mai vissuto alcuna esperienza allucinatoria/paranormale. Un'analisi di regressione lineare gerarchica sui punteggi di propensione ad esperire AU non cliniche (step=1: variabili demografiche; 2: religiosità negativa, es. paura di punizioni ultraterrene; 3: religiosità positiva, es. protezione da parte di entità ultraterrene; 4: ansia; 5: depressione) ha mostrato che le variabili demografiche spiegano il 10% della varianza (giovane età e sesso femminile associati a maggiore AU). Rispetto alle misure di religiosità, solo la componente negativa predice in maniera significativa le AU (componente positiva non significativa), e infine punteggi elevati di ansia e depressione sono significativamente associati a maggiore propensione ad esperire AU. Complessivamente, il modello finale spiega quasi il 30% della varianza e i risultati mostrano dunque una relazione complessa tra allucinazioni uditive non cliniche e religiosità, rivelando che anche altri fattori, come ansia e depressione, giocano un ruolo cruciale in questo fenomeno.

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Exploring Psychopathological Conditions and Birth Weight Effects in ADHD: A Preliminary Study

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Attention-Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder characterized by inattention, impulsivity, and hyperactivity, with onset during childhood. It is usually comorbid with different psychopathological conditions, resulting in a global functioning impairment. Moreover, available evidence suggests that lower birth weight could be a risk factor for development of ADHD and its linked psychopathological features. In accordance with this scenario, the aims of this preliminary study were twofold: (1) to explore main psychopathological conditions associated with ADHD; (2) to understand the role of birth weight in predicting them. Forty-six ADHD children (41 boys, 5 girls; mean age = 8.46 ± 2.40; mean birth weight = 3.10 ± 0.65) were recruited via convenience sampling. The Child Behavior Checklist (CBCL) and Disruptive Behavior Rating Scale (SCOD) were administered to the children's parents. The whole sample showed borderline scores

on anxious/depressed, social and attention problems, rule-breaking and aggressive behavior CBCL subscales. Additionally, clinically relevant scores on CBCL internalizing, externalizing, and total score scales were detected. Besides, birth weight was negatively correlated with internalizing and total score CBCL scales. Moreover, anxious/depressed, social and attention problems, aggressive behavior, and internalizing, externalizing, and total score CBCL scales were significantly correlated with SCOD-inattentive and SCOD-hyperactivity/impulsivity subscales. Those with clinical scores on SCOD-inattentive and SCOD-hyperactivity/impulsivity also showed higher levels on CBCL total scores. Moreover, birth weight predicts CBCL internalizing and total scores. The findings underscore the complexity of ADHD, highlighting its broad spectrum of psychopathological symptoms, and emphasize the significance of birth weight in contributing to neurodevelopmental challenges.

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La Deviazione della Direzione dello Sguardo e l'Effetto di Congruenza Invertito: Analisi delle Ipotesi di Contatto Oculare e Attenzione Condivisa

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La capacità umana di percepire la direzione dello sguardo altrui è fondamentale per le interazioni sociali, potendo coinvolgere meccanismi attentivi specializzati. In uno studio che utilizza una variante del compito di Stroop spaziale, Marotta, Caballero e Lupiáñez (2018) hanno osservato che lo sguardo, a differenza delle frecce, provoca un effetto di congruenza invertito (ECI), con tempi di reazione più brevi in condizioni incongruenti rispetto a quelle congruenti. Due ipotesi principali sono state proposte per spiegare questo fenomeno: l'ipotesi del contatto oculare, che suggerisce che i partecipanti interpretino lo sguardo incongruente come diretto verso di loro, facilitando così la risposta; e l'ipotesi dell'attenzione congiunta, secondo cui lo sguardo incongruente è percepito come diretto verso il punto di fissazione, attivando una condivisione dell'attenzione.
Per discriminare tra queste ipotesi, è stato realizzato un esperimento che ha utilizzato come stimolo target uno sguardo deviati di 15° o 40°. Si assumeva che la deviazione di 15° potesse favorire la percezione del contatto oculare, mentre quella di 40° potesse promuovere l'attenzione congiunta. Si é osservato un ECI maggiore nella condizione di 15° rispetto a quella di 40°, essendo questo risultato più coerente con l'ipotesi del contatto oculare piuttosto che con quella dell'attenzione congiunta.

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Il ruolo dell'equilibrio psicologico, dell'efficienza neurocognitiva e della fitness fisica nel benessere individuale: un modello triadico per l'identificazione di target per l'empowerment

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Negli ultimi anni, il benessere è diventato un argomento di crescente e intenso dibattito nelle politiche pubbliche e socio-economiche, e il suo miglioramento è considerato una chiave fondamentale per il progresso sociale. Sebbene una definizione universale di benessere non sia ancora presente in letteratura, i modelli multicomponenziali riconoscono tipicamente la sua natura multifaccettata e si concentrano su specifiche dimensioni del benessere. Nell'ambito della psicologia positiva, le esperienze edoniche - caratterizzate dall'alternanza di vissuti affettivi positivi e negativi - sono considerate determinanti primarie del benessere psicologico. A partire da tali premesse, questo lavoro introduce un modello triadico in cui l'Equilibrio Psicologico, insieme all'Efficienza Neurocognitiva e alla Fitness Fisica, costituiscono tre pilastri distinti ma interdipendenti che supportano il benessere individuale. Tali componenti rappresentano, inoltre, degli obiettivi primari anche nei protocolli di empowerment a distanza, volti a fornire una soluzione sostenibile e accessibile per promuovere self-enhancement, prevenire il disagio psicologico e contrastare il declino psicofisico nel ciclo di vita. In tal direzione, protocolli di empowerment neurocognitivo basati su pratiche di consapevolezza embodied e dispositivi di neuromodulazione non invasiva hanno già dimostrato di poter modulare l'efficienza neurocognitiva e l'equilibrio psicologico, favorendo migliori capacità di autoregolazione e funzioni esecutive ottimizzate. In aggiunta, si è osservato come la componente dell'equilibrio psicologico possa essere specificamente e positivamente influenzata da interventi basati sulla natura. E infine, i protocolli combinati di stimolazione cognitiva e sensorimotoria hanno già mostrato il loro potenziale per influenzare la fitness fisica nel ciclo di vita.

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Attenzione selettiva in campo: uno studio su basket e pallavolo

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Le abilità attentive sono fondamentali in ogni disciplina sportiva. Tuttavia, i benefici cognitivi specifici al tipo di sport praticato sono stati fino ad ora scarsamente indagati. Il presente progetto di ricerca, strutturato in due studi, ha l'obiettivo di indagare i benefici sull'attenzione selettiva confrontando atleti esperti e non atleti, considerando sia sport di invasione, i.e. giocatori di basket, e sport da rinvio, i.e., giocatrici di pallavolo. Sono stati somministrati due paradigmi: il Flanker task per valutare le abilità di attenzione spatial-based e il Visual Search per misurare l'attenzione selettiva feature-based. Quest'ultima si ipotizza essere particolarmente allenata negli sport di invasione, data la richiesta continua di identificare, in base a caratteristiche visive specifiche (e.g., il colore della divisa), i propri compagni di squadra tra i giocatori in campo. I risultati confermano l'ipotesi, mostrando un vantaggio dei giocatori di pallacanestro nell'attenzione selettiva feature-based rispetto al gruppo di controllo, beneficio non riscontrato nel gruppo di atleti da rinvio. Inoltre, non è emersa alcuna differenza nella capacità di attenzione selettiva spatial-based tra atleti e non atleti in entrambi gli studi. In conclusione, i risultati mostrano effetti sport-specifici sull'attenzione selettiva, ma solo nella componente feature-based e non in quella spaziale.

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Inhibitory and heuristic mechanisms in voluntary rule selection

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Co-authors: Anna Zigrino [2]; Rebecca Minafra [2]; Fabio Ferlazzo [2]; Stefano Sdoia [2]

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Sequential control of action relies on both cognitive control and decision-making processes. Flexible task control is also supported by inhibition of recently abandoned task sets so that performance is slower in N-2 task repetition sequences (e.g., ABA) versus N-2 task switch sequences (CBA). However, it is not clear whether the mechanisms supporting sequential control of task sets generalize to voluntary rule selection. Research on voluntary task-switching suggested that two competing heuristics –availability and representativeness –are actively involved in biasing task selection. The availability heuristic encourages a short-term memory-based preference toward the most active representation while the representativeness prompts a selection strategy based on a top-down, long-term, representation of sequences.
Using an ad-hoc rule-shifting paradigm, we have previously found that participants show reduced preference in selecting rules that have been recently relevant (N-2 alternation bias). To dissociate inhibitory and heuristic accounts of such a preference, we manipulated the occurrence of N-2 rule repetitions and/or the relative frequency of rules.
The preliminary results show that while rule selection seems to adjust to the base-rate frequency of rules, the occurrence of N-2 repetition sequences further modulates the N-2 alternation bias and the effect of frequency. These findings may suggest the selective contribution of inhibitory and heuristic mechanisms in voluntary rule selection.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks / 105

Biological Rhythms as Key Mediators in Major Depressive Disorder: Implications for Symptomatology and Treatment

Author: Claudia Savia Guerrera[1]

Co-authors: Francesco Maria Boccaccio [2]; Giuseppe Alessio Platania [1]; Simone Varrasi [1]; Vittoria Torre [1]; Cettina Pirrone [1]; Filippo Caraci [3]; Sabrina Castellano [1]

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Major Depressive Disorder (MDD) is a complex mental health condition characterized by persistent feelings of sadness, loss of interest, and impaired daily functioning across cognitive, social, and occupational domains. Research has consistently highlighted dysregulation of biological rhythms in individuals with depression, exacerbating depressive symptoms and impairing overall functioning. This preliminary study aims to investigate the role of biological rhythms in the heterogeneous symptomatology of Major Depressive Disorder. The sample consisted of 53 MDD patients (34 male and 19 female) who underwent comprehensive neuropsychological evaluation. The results shown significant correlations between affective symptoms of depression (HDRS) and psychosocial functioning (FAST), as well as biological rhythms (BRIAN), particularly regarding sleep, activity, and social rhythms. Additionally, affective symptoms were associated with sleep patterns (PSQI), including latency, effectiveness, and subjective sleep quality. Moreover, biological rhythms appear to mediate the causal relationship between HDRS and FAST, serving as a partial mediator in the relationship between these two variables.
Understanding the complex interplay between depression and biological rhythms is crucial for developing more effective treatment strategies. Targeting interventions to restore circadian rhythm stability, such as light therapy, sleep hygiene practices, or pharmacological agents, may alleviate depressive symptoms and enhance overall functioning in individuals with MDD.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Mini-talks / 304

Relazione tra i tratti di personalità HEXACO e il rendimento scolastico degli adolescenti di scuola media

Authors: Augusto Gnisci[1]; Francesca Mottola[1]; Ida Sergi[1]; Marcello Gallucci[2]; Marco Perugini[2]; Vincenzo Paolo Senese[1]

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Il rendimento scolastico è da tempo al centro dell'interesse della comunità educativa. Numerosi studi hanno esaminato i fattori che lo influenzano, esplorando non solo l'impatto delle abilità cognitive, ma anche il ruolo di fattori non cognitivi come i tratti di personalità. Tali studi hanno evidenziato che i tratti di personalità e il rendimento scolastico sono significativamente correlati. Tuttavia, ad oggi, gli studi che hanno indagato tale relazione utilizzando il modello HEXACO nella valutazione della personalità, in particolare degli adolescenti, sono ancora limitati. A tal proposito, il presente lavoro si propone di indagare la relazione tra i tratti di personalità HEXACO e il rendimento scolastico in due ampi campioni di adolescenti italiani di 10-14 anni (N=714 e N=1093) utilizzando i modelli misti multilivello. I risultati principali hanno mostrato che: 1) la Coscienziosità e l'Apertura all'Esperienza erano i predittori più importanti del rendimento scolastico, seguiti dall'Onestà-Umiltà; 2) un effetto modesto era presente anche per l'Estroversione e l'Emotività; 3) queste influenze si sono verificate al netto dell'influenza del genere e della classe e possono essere generalizzate agli adolescenti maschi e femmine di prima, seconda e terza media; 5) i risultati sono stati replicati in due studi. I risultati di questo lavoro possono aggiungere conoscenze significative al campo della psicologia degli adolescenti, fornendo nuovi dati su come la personalità influisce sulle dinamiche di apprendimento e sul comportamento degli adolescenti.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Symposia: Understanding Memory: Implications from neuronal to clinical populations / 180

Understanding Memory: Implications from neuronal to clinical populations

Author: Francesco Ceccarelli[1]

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Memory incorporates the abilities to generate, recall, and store active and manipulable representations that are the functional backbone for planning goal-directed behavior, supporting a wide range of cognitive processes such as logical reasoning, learning, and problem-solving. A multidisciplinary approach incorporating both animal models and human subject studies guarantees in-depth investigation of the neuronal substrates and the distributed network of areas that underlies such a pivotal cognitive process.
This symposium aims to present recent findings that provide novel insights into how neuronal populations and complex behavioral tasks in different areas are involved in distinct memory processes. Ceccarelli will discuss how distinct cell types in the macaque prefrontal cortex express mixed temporal coding properties to maintain a choice representation in working memory. Cavezza will talk about the mouse thalamus-hippocampus pathway involvement in multiple-item memory consolidation and how distinct activation patterns are implicated in gender differences in memory capacity. Ramawat will discuss how single neurons in the macaque prefrontal cortex contribute to learning hierarchical relationships between items and how the memory retention and recall of such relationships facilitate logical inference of new relationships during a transitive inference task. Finally, moving into a clinical approach, Costanzo will discuss how core tasks for identifying hippocampus-dependent memory dysfunctions in Down's syndrome children can reveal different memory profiles. Cognitive deficits that impact such fundamental memory mechanisms are pivotal in disorders such as schizophrenia and Down's syndrome. The symposium can advance the basic and clinical knowledge needed to explore interventions aiming at addressing memory symptoms in such pathologies.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Understanding Memory: Implications from neuronal to clinical populations / 325

The macaque prefrontal cortex implements a mixed coding scheme driven by cell types for choice retention in working memory

Author: Francesco Ceccarelli[1]

Co-authors: Aldo Genovesio [2]; Fabrizio Londei [2]; Francesco Siano [2]; Giulia Arena [2]

[1] *Aldo Genovesio Lab, Department of Physiology and Pharmacology, Sapienza University, 00185 Rome, Italy*

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For decades, several studies using a wide range of approaches attributed a pivotal role to the prefrontal cortex (PFC) for maintaining multiple information during memory periods in working memory (WM). However, there is still a heated debate about the neural schema involved in WM maintenance of information over time, with the classical doctrine proposing a persistent coding mechanism and static population scheme as opposed to more recent evidence that argues in favor of a transient coding mechanism and dynamic population scheme. Using a strategy task where two macaques had to implement an abstract response strategy and subsequently hold their choice in WM during a delay period preceding the execution of the choice-based action, we investigated the coding scheme implemented by cell type populations (GABAergic interneurons and pyramidal neurons), previously classified. Furthermore, to evaluate the specificity of the coding scheme investigated during the memory period, we analyzed an additional epoch of the task following the execution of the choice-based action. We first found that both cell types contributed to maintaining the choice information in the WM period, with a surprisingly greater contribution from the interneuron population. Next, we applied a machine learning algorithm to assess the similarity of the population activity patterns over time. We found that PFC implemented a mixed coding scheme: static for pyramidal neurons and dynamic for interneurons. Such stability for pyramidal neurons was memory-period specific and then switched to a dynamic scheme thereafter, whereas interneurons maintained a continuous dynamicity even after the memory period.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Understanding Memory: Implications from neuronal to clinical populations

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders / 59

Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders

Author: Silvia Picazio[1]

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Eating is fundamental to survival and well-being and already at the dawn of experimental psychology the role of food in learning processes was recognized in seminal works of Pavlov and Skinner. In modern society, the innate urge to eat is often overridden by the abundance of nutrients. In this contest eating disorders are constantly increasing and difficult to treat, thus neuroscientists have taken a renewed interest in the study of eating behaviour.
The aim of this symposium is to offer an updated view on the understanding of complex relationship between reward value, inhibitory-control, multisensory-integration and decision-making as functions of eating self-regulation. The speakers will discuss original data of on-going research conducted with behavioral, electrophysiological and functional connectivity methods both in healthy normal-weight participants and patients affected by eating disorders.
In the first talk Dr. Valentina Bianco will present behavioural evidence showing how the reward value of observed food stimuli affects motor performance in normal-weight participants and in individuals with obesity.
The presentation of Prof. Giulia Mattavelli will concern the electrophysiological correlates of implicit food attitudes and risky decision-making involving both food and monetary rewards.
The talk of Dr. Gerardo Salvato will be focused on the neurocognitive multisensory integration deficits contributing to disorders of the "corporeal" and "deciding"self in eating disoders.
Finally, Dr. Silvia Picazio will illustrate new evidence from patients with anorexia nervosa compared to healthy-participants regarding food-related inhibitory control and the specific role of fronto-cerebellar networks in these processes.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Esposizione alla natura e rigenerazione cognitiva, affettiva e sociale: evidenze da esperienze reali e virtuali / 430

ESPOSIZIONE ALLA NATURA E RIGENERAZIONE COGNITIVA, AFFETTIVA E SOCIALE: EVIDENZE DA ESPERIENZE REALI E VIRTUALI

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La letteratura dimostra capacità rigenerative degli ambienti naturali ed effetti positivi dell'esposizione alla natura sul benessere psicologico e sui processi cognitivi, affettivi e sociali, con crescente interesse verso i meccanismi sottostanti e i benefici correlati. Ci si propone di approfondire ciò con quattro presentazioni sul potenziale rigenerativo dell'ambiente naturale, esperito in modo mediato (primi due contributi) o direttamente (ultimi due contributi).
1) Pasini et al. esplorano la relazione tra indizi percettivi dello spazio tridimensionale, proprietà strutturali globali di un'immagine e percezione di rigeneratività, valutando come otto indizi percettivi

influenzino le proprietà strutturali globali e la percezione di rigenerativitá di immagini naturali.
2) Vitale e Bonaiuto indagano gli effetti della visione di video o di realtà virtuale con diversi ambienti (naturali vs. urbani) sugli stati emotivi e sulle strategie di regolazione emotiva adottate dopo induzione di emozioni negative.
3) Laezza et al. esaminano effetti dell'attività fisica in ambienti naturali, urbani e indoor sul benessere psicologico e fisiologico mostrando il potenziale della natura per favorire rigenerazione e stile di vita sano.
4) Bolognesi et al. esplorano l'impatto delle esposizioni frequenti ad ambienti naturali su atteggiamenti pro-ambientali, emozioni e benessere psicologico di alunni/e in scuola primaria e secondaria.
Questi nuovi risultati sulla rigenerativitá degli ambienti naturali sono ottenuti con diversi approcci sia alle modalità di esposizione della natura (virtuale o diretta), sia al livello concettuale delle variabili dipendenti (cognitive, affettive, sociali), sia alle modalità di misurazione degli effetti (fisiologici, self-report).

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No

Symposia: Esposizione alla natura e rigenerazione cognitiva, affettiva e sociale: evidenze da esperienze reali e virtuali / 314

Gli effetti degli indizi percettivi dello spazio tridimensionale sulla percezione di rigenerativitá di una scena: uno studio esplorativo.

Authors: Valentina Mariani[1]; Luca Laezza[2]; Margherita Pasini[3]; Margherita Brondino[3]; Roberto Burro[4]

[1] *University of Verona, Department of Human Sciences*

[2] *Università di Verona, University of Copenhagen*

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Questo contributo indaga la relazione tra indizi percettivi dello spazio tridimensionale (IPTS), proprietà strutturali globali (PSG) di un'immagine e percezione di rigenerativitá (PR), ipotizzando che otto IPTS (e.g., prospettiva lineare, prospettiva aerea, gradiente di tessitura, altezza relativa) siano alla base di tre PSG delle immagini (i.e., apertura, espansione, profondità) che, a loro volta, generano PR.
Il Scene Centered Approach (SCA), in accordo con l'Attention Restoration Theory, postula che, nell' esplorare il contenuto di un'immagine per comprenderne il significato, l'attenzione degli individui è rapidamente attratta da alcune PSG che sono presenti a livelli più alti in immagini di ambienti naturali piuttosto che costruiti. La sfida di questo studio è come misurare questi elementi percettivi. A tale scopo è stato ideato un disegno sperimentale in due fasi. Nella fase 1 viene indagata la relazione tra alcune PSG, ricavate dal SCA, e PR di 8 scene naturali, utilizzando due metodi di misurazione (presentazione di immagine singola con scala Likert a 7 punti vs presentazione di stimoli accoppiati con scala dicotomica) e due metodi di analisi (T-Test a campioni appaiati e Cluster analisi). Nella fase 2, 12 scene naturali, prototipiche di otto IPTS e scalate su ciascun IPTS attraverso il metodo dell' ordine di rango, sono valutate sui livelli delle tre PSG risultate significative nella fase 1 (i.e, apertura, espansione, profondità) e sulla PR, con scala Likert. Con i punteggi ottenuti, applicando un modello lineare gerarchico, si verificherà se esiste una relazione tra IPTS e PR e se questa relazione è mediata dalle PSG delle immagini.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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ESPOSIZIONE ALLA NATURA E RIGENERAZIONE COGNITIVA, AFFETTIVA E SOCIALE: EVIDENZE DA ESPERIENZE REALI E VIRTUALI

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Breaking into the attentional mechanisms underlying cognition via the science of pupil / 244

Breaking into the attentional mechanisms underlying cognition via the science of pupil

Authors: Giulia Calignano[1]; Sofia Russo[2]

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

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Every image we see first enters our brain through the pupil. This dynamic window in the iris regulates its opening and closing as a function of luminance and, importantly, psychosensory stimulation (Loewenfeld,1958). During the last decades, the birth and development of pupillometry techniques investigating this psychosensory response has shed light on the cognitive underpinning of a vast range of mental processes. In this symposium, a chorus of young and promising, early career researchers will discuss the most recent advances in the application of this psychophysiological measure. The first talk will present the application of pupillometry to the study of preverbal and verbal populations, to the processing of visual, auditory and, tactile information including linguistic and music stimuli (Russo et al., 2023). The second talk will illustrate the opportunities and challenges of applying pupillometry to the study of object concepts in infancy (Mayer et al., 2023). The third talk will move toward the assessment of early theory of mind and social cognitive processes in preverbal infants (Pflüger et al., 2024). Lastly, the fourth contribution will shed light on pupillometry as a method for assessing cognitive effort during the administration of a verbal memory span test in the presence of noise (Gheller et al., 2024). In summary, this symposium will discuss the important insights pupillometry brought to experimental research in the last decade, also considering implications and future challenges regarding different experimental techniques, cognitive and sensory domains, and developmental stages.

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 71

Processi sensomotori e cognizione: recenti evidenze ed applicazioni

Authors: Claudia Repetto[1]; Silvia Serino[2]

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[2] *Università degli Studi di Milano-Bicocca*

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L'obiettivo di questo simposio è presentare evidenze sperimentali che descrivono l'interazione tra i processi cognitivi e quelli sensomotori, nella cornice teorica dell'Embodied Cognition.
Questa prospettiva, infatti, propone una visione altamente integrata di mente e corpo in cui le operazioni mentali, come la comprensione di una parola o la sua memorizzazione, sono strettamente connesse e dipendenti dal nostro corpo. L'idea di una stretta connessione tra i processi cognitivi e il sistema corporeo implica che il sistema percettivo e il sistema motorio partecipano attivamente ai processi mentali come la processazione del linguaggio, la memorizzazione di informazioni e la formazione di giudizi.
Di conseguenza, il simposio includerà cinque contributi incentrati sul ruolo delle rappresentazioni sensomotorie nella riabilitazione dell'afasia, nella memoria procedurale ed esplicita, nell'elaborazione sintattica, nella formazione di giudizi di piacevolezza e nella loro interazione con il processamento cognitivo degli stimoli.

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No

Symposia: Breaking into the attentional mechanisms underlying cognition via the science of pupil / 342

Applying pupillometry to investigate developmental trajectories of attentional engagement toward rhythmic patterns in music and speech across sensory modalities

Author: Sofia Russo[1]

Co-authors: Filippo Carnovalini [2]; Giulia Calignano [3]; Barbara Arfé [4]; Antonio Rodà [2]; Eloisa Valenza [1]

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First experiences with rhythm occur in the womb, with different rhythmic sources being available to the human fetus. Among sensory modalities, vestibular, tactile, and somatosensory perception (VTS; Provasi et al., 2014) plays a crucial role in early processing. However, a limited number of studies so far has focused on VTS rhythms in language development, due to the difficulties of assessing cross-sensory processing abilities in early development. In this work, we take advantage of pupillometry to assess changes in pupil diameter as a measure of attentional engagement while presenting infants with experimental stimuli across different sensory modalities. Specifically, VTS rhythmic abilities are firstly assessed through a vibrotactile tool for music perception in a cohort of 45 infants (21 females; M age = 661.6 days, SD = 192.6; Experiment 1). In Experiment 2, the link with auditory, linguistic abilities is evaluated by testing phonological and prosodic processing. Discrimination abilities for rhythmic and linguistic stimuli across experiments are inferred from changes in pupil diameter to contingent visual stimuli over time, collected through a Tobii X-60 eye-tracker (Hepach and Westermann, 2016; Mathôt, 2018; Calignano et al., 2023). The predictive effect of VTS rhythmic abilities on linguistic processing and the developmental changes occurring across ages were explored

by means of generalized, additive and linear, mixed-effect models. Results are discussed in terms of cross-sensory (i.e., haptic to hearing) and cross-domain (i.e., music to language) effects of rhythm on language acquisition, with implications for typical and atypical development.

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If you're submitting a symposium talk, what's the symposium title?:

Breaking into the attentional mechanisms underlying cognition via the science of pupil

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 72

Aphasia 360°: un protocollo di Realtà Virtuale per la riabilitazione delle anomie

Author: Claudia Repetto[1]

Co-authors: Alessandra Maietti ; Michelle Caldana ; Alice Cancer

[1] *Università Cattolica del Sacro Cuore Milano*

Corresponding Author: claudia.repetto@unicatt.it

L'afasia è un deficit acquisito a seguito di un danno acuto al sistema nervoso centrale che comporta la difficoltà o l'impossibilità di comprendere e formulare il linguaggio. Un disturbo tipico delle forme di afasia non fluente è l'anomia. L'anomia si riferisce alla difficoltà di trovare le parole, in particolare quando si cerca di nominare oggetti e azioni. Secondo l'approccio della Embodied Cognition (EC), il linguaggio è strettamente connesso al sistema motorio. Secondo questa visione, i programmi di riabilitazione linguistica dovrebbero stimolare il linguaggio attraverso l'attivazione del sistema motorio. In questo approccio, poiché i deficit anomici sono spesso dovuti a un debole legame tra il significato della parola e il suo lemma, si possono sfruttare i principi di Hebbs dell'apprendimento coincidente e correlato, cioè intensificando l'attivazione sincrona del lessico e della semantica e collegandoli con la controparte motoria. In questo studio presentiamo un training innovativo, basato sul quadro EC, in cui utilizziamo le nuove tecnologie per la riabilitazione dell'anomia nei pazienti post-ictus. In particolare, il gruppo sperimentale è sottoposto alla visione di video 360° che rappresentano azioni quotidiane visualizzate (in modo immersivo) dal punto di vista in prima persona. Il gruppo di controllo guarda video standard che rappresentano le stesse azioni registrate da una prospettiva in terza persona. Il training viene somministrato 3 volte a settimana per 4 settimane. Le abilità di denominazione vengono testate prima e dopo il training, insieme ad altre misure cognitive e psicologiche. Verranno presentati dati preliminari sull'efficacia del trattamento.

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Processi sensomotori e cognizione: recenti evidenze ed applicazioni

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No

Symposia: Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders / 68

Direct and indirect effects of the reward value of observed food stimuli on motor behavior

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Several studies testing cognitive control in the general population using images of food of varying palatability showed that cognitive performance was increased for high- than low-calorie food suggesting a fine-tuning of cognitive processing for foods with different salience. The interaction between dealing with different degrees of rewarding stimuli and cognitive performance highlights the critical role of the reward system in shaping perception. Here we show evidence of direct and indirect effects of the reward value of observed food stimuli on motor behavior. In the first study we explored the behavioral and cortical excitability signatures of improved performance for high- than low-calorie food images during a food go-no task. Crucially, in this case the caloricity of the food was task-relevant. In the second study we administered an action prediction task using high- was low-calorie food objects to normal-weight and obese individuals under a fasting or a satiety state. Here, the caloricity of the observed food objects was not task-relevant. We provided evidence of altered sensitivity to the reward value of food stimuli in obesity, despite a conserved sensitivity to hunger and of the beneficial effects of fasting, which may sharpen senses independently from individual weight. In conclusion our findings 1) confirm the improved performance when dealing with images of food with higher palatability in normal-weight participants independently from the relevance of caloricity during task instructions; 2) show evidence of reward dysfunction in obese individuals and 3) point at beneficial effects of fasting on perceptual/cognitive performance during social prediction tasks.

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Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders

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No

Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 466

Ridefinire i confini tra sensorimotorio e cognitivo: il caso della memoria procedurale ed esplicita

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Lo sviluppo dell'Embodied Cognition (EC), la cui nascita viene solitamente fatta risalire ai primi anni 90', ha ruotato intorno all'idea secondo cui vi sia una profonda interdipendenza tra la cognizione e quelli che vengono definiti i processi sensomotori. La traiettoria dell'EC è stata per certi aspetti sorprendenti, a tal punto da venire considerata "una nuova psicologia"(Caruana Borghi, 2013), nonché la cornice teorica di numerosi filoni di ricerca teorici e applicativi (Robinson Thomas, 2021). Il talk si propone in prima istanza di offrire alcuni esempi di situazioni in cui memorie motorie e procedurali riflettono o addirittura plasmano aspetti salienti del funzionamento cognitivo (e.g., come la fluenza con cui compiamo alcuni movimenti possa rispecchiare o modellare la fluenza con cui ricordiamo determinanti eventi oppure il modo in cui giudichiamo determinati stimoli). Il talk mira inoltre a evidenziare uno dei contributi più importanti dell'EC, ovvero quello di aver evidenziato la necessità di ridefinire i rigidi confini tra ciò che definiamo ambiente, corpo e cognizione, nonché i confini all'interno delle diverse funzioni cognitive. Al tempo stesso, alla luce

della bi-direzionalità e reciproca influenza insita nella relazione sensorimotorio-cognitivo, verrà sottolineato come la dicotomia embodied-disembodied cognition possa essere fuorviante.

Symposia: Understanding Memory: Implications from neuronal to clinical populations / 264

Neuronal encodes of a memory-based schema during a transitive Inference task: evidence from primate prefrontal cortex activity

Author: Surabhi Ramawat[1]

Co-authors: Fabio Di Bello [2]; Valentina Mione [2]; Pierpaolo Pani [2]; Emiliano Brunamonti [2]; Stefano Ferraina [2]

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Relational inference using previously memorized information is one of the aspects of intelligence in humans and non-human animals. Provided that the premises A>B and B>C are well memorized, the subject is able to infer that A>C. This ability to use overlapping information and extend it to deduce a novel relationship forms the basis of Transitive Inference (TI) capability. To solve these deductions, the role of memory, especially working memory (WM) is crucial. Previous neurophysiological studies have described the pattern of neuronal activity from the Prefrontal Cortex (PFC), an area involved in WM, being modulated while an abstract mental schema of ranked items is accessed during a TI task. However, the question of how the neuronal encoding of the individual items subtending this schema is shaped by learning the reciprocal relationships is relatively unexplored. In this study, we address this question by investigating the single-neuron activity recorded from the dorsolateral PFC of 2 monkeys as they learned a 6-item ranked series (A>B>C>D>E>F) and solved TI problems. Each session comprised two consecutive phases: the learning phase, when the monkeys learned the reciprocal relationships (e.g., A vs B, B vs C, etc.), and then the test phase, requiring logically inferring novel relationships (e.g., B vs D). Our results confirmed that the behavioral performance during the learning and the test represents the acquisition and recall of a schema, while the encoding of this schema is differently represented by neuronal activity from learning to test.

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Symposia: Esposizione alla natura e rigenerazione cognitiva, affettiva e sociale: evidenze da esperienze reali e virtuali / 434

Effetti della visione di scenari naturali e urbani in video e in realtà virtuale sui processi di regolazione emotiva: due studi sperimentali

Author: Valeria Vitale[1]

Co-author: Marino Bonaiuto [1]

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La ricerca ha dimostrato benefici della natura sul benessere psicologico, evidenziando effetti positivi sulle emozioni. Tra le teorie proposte per spiegare tali effetti, alcuni studi riguardano i processi di regolazione emotiva, suggerendo che l'esposizione alla natura aumenta l'utilizzo di strategie adattive, e riduce quelle disadattive.

Questo contributo propone due studi sugli effetti dell'esposizione alla natura (video/scenari virtuali) sulle strategie di regolazione emotiva e sulle emozioni, in seguito all'induzione di emozioni negative. Si ipotizza che gli ambienti naturali, grazie alla maggiore rigenerativà dei luoghi (PRS), supportano strategie più adattive (a differenza degli ambienti urbani), con conseguente maggiore diminuzione delle emozioni negative.
Il primo studio adotta un approccio within subject con 3 condizioni sperimentali (video: ambiente naturale, centro storico, strada trafficata) e 3 misurazioni delle emozioni (pre-/post-procedura di induzione negativa, post-video). Con un campione di 56 partecipanti (42 donne, Mage=28.8), è stato testato un modello di mediazione seriale, con condizioni sperimentali come predittore delle emozioni negative post-video, inserendo come mediatori seriali: 1)PRS, 2)Strategie adattive e disadattive. È significativo l'effetto di mediazione seriale con PRS e strategie adattive sulle emozioni negative, per condizione con ambiente naturale (β=-.06; 95%CIs=-.18, -.01; p=.028).
Il secondo studio (raccolta dati in corso) adotta un disegno misto con 5 condizioni come fattore between (scenari virtuali: artico, isola, bosco, campagna, urbano) e 3 misurazioni delle emozioni come fattore within (come studio 1).

La ricerca conferma la rilevanza dell'esposizione a stimoli naturali, rispetto ai processi di regolazione emotiva, sottolineando la possibilità di utilizzare queste potenzialità per per il miglioramento del benessere.

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Symposia: Breaking into the attentional mechanisms underlying cognition via the science of pupil / 332

Effect of noise on the performance of young adults in verbal working memory tasks: pupillometry as a measure of cognitive effort

Authors: Flavia Gheller[1]; Gaia Spicciarelli[1]; Barbara Arfé[1]

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Concentrating to perform listening tasks in a noisy environment requires to re-allocate mental resources to overcome the interference of noise. This process and the resulting fatigue, i.e., listening effort, can be detrimental to cognitive performance.

Research has shown that eye pupil dilation and high blink rates can be considered psychophysiological markers of cognitive effort, making pupillometry a practical and reliable method for evaluating cognitive load.
In this study, we tested the effects of unintelligible noise (multitalker babble noise) on university students'performance of the Digit Span (DS) Test. The participants performed the DS test (Forward and Backward) under two different acoustic conditions: quiet and noise (noise administered through headphones at an intensity of 65 dB A). Task order was counterbalanced between participants.
The Digit Span Test assesses verbal working memory by recalling a series of auditory digits presented through headphones, in the same order (forward subtest) and in reverse order (backward subtest).
Participants wore a portable eye-tracker (Pupil Labs) to record their pupil diameter during performance in both acoustic conditions. Additionally, the number of ocular blinks was assessed.
Participants'performance on the digit span tasks in quiet and noise was thus complemented by an assessment of the changes in pupil diameter and number of blinks compared to a baseline, aiming to evaluate the effect of noise on their listening and cognitive effort.
Furthermore, each participant was asked to complete a self-report questionnaire to assess their perceived cognitive effort during the task. Results will be discussed in light of existing literature.

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Yes

Symposia: Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders / 58

Electrophysiological correlates of food preference and risky decision-making.

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Co-authors: Irene Gorrino [2]; Claudia Gianelli [3]; Nicola Canessa [1]

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Food is a key reward stimulus that drives human behaviour according to individual preferences. Behavioural mechanisms and neural processing underpinning food attitudes and reward values have been investigated independently from one another, but a more detailed investigation of the processes involved in individual food preferences and of the potential relationship with food and monetary reward is still lacking. The present study investigated the electrophysiological (EEG) correlates of food-related implicit attitudes and decision-making under risk with food and monetary reward stimuli.
The EEG of 43 healthy volunteers was recorded while they underwent Implicit Associations Tests (IAT) on tasty/high calories versus tasteless/low calories food (food-IAT) and flowers versus insects as control (flower-IAT), in addition to loss aversion tasks presenting participants with gain-loss gambles involving monetary or food rewards. Analyses on the IATs revealed significant differences between the congruent and incongruent condition of the food-IAT in late time-windows (400-700 ms) and in components located in the anterior/middle cingulate gyrus and caudate nucleus previously associated with emotion processing and attentional allocation to relevant stimuli. Preliminary results on the loss aversion tasks showed behavioural differences in participants'tendency to accept

gambles related to food vs. money, correlating with individual food preferences, although EEG correlates were not significantly different between the two types of reward stimuli.
These findings support the role of semantic and emotional control processes in implicit food preferences, and highlight the relevance of individual attitudes in evaluating reward values of food.

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Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 65

Syntax and semantics are linked during sensorimotor processing of noun-adjective pairings: evidence from a grasp-compatibility task.

Author: Gioacchino Garofalo[1]

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Evidence suggests that specific motor plans linked to potential hand-object interactions are activated when semantically processing graspable object nouns. Furthermore, it has also been demonstrated that adjectives expressing object features can modulate these motor plans. Since semantics and syntax are learned together during the lifespan, it is conceivable that syntax can have a role in sensorimotor activation during language processing. This study investigated the role of syntax by comparing two languages with different syntactic structures (Experiment 1 –Italian, Experiment 2 – English). In both experiments, an adjective-noun pair was shown on the screen, with the adjective presented always in pre-nominal position. Adjectives denoted either a disadvantageous quality of the object graspability (e.g., sharp) or the object colour (e.g., reddish). Participants had to categorize the object nouns as natural or artifact, performing a precision or a power reach-to-grasp movement. On different trials, the grasp response was compatible or incompatible with the size of the object denoted by the noun. In Experiment 1 the adjective-noun order violated the syntactic rule and no difference emerged between compatible and incompatible trials. In Experiment 2, the adjective-noun order met the syntactic rule. Results showed slower responses on compatible than incompatible trials when disadvantageous adjectives preceded the nouns, while a standard compatibility effect emerged when colour adjectives preceded natural object nouns. Similar results were previously found when the Italian combinations followed the correct syntactic order. Taken together, these modulations show that syntax contributes to sensorimotor activation. Results are discussed with respect to embodied cognition theories.

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Symposia: Understanding Memory: Implications from neuronal to clinical populations / 406

Exploring Gender Disparities in Memory Capacity: Insights into Varied Brain Circuit Utilization

Author: Diletta Cavezza[1]

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Memory capacity refers to the limited quantity of information that short-term memory can hold, proposed by Miller to be around 7 +/- 2 elements. In contrast, long-term memory is believed to have an unlimited capacity, though this holds true primarily for information that can be rehearsed, rather than spontaneously encoded. In this study, we investigated the neurobiology of memory capacity during spontaneous encoding in female and male subjects.Employing a behavioral task to investigate object memory span in mice, we discovered that both female and male mice exhibit a short-term memory (STM) capacity of 6 objects. However, while male mice retain all objects in long-term memory (LTM), females remember only 4 objects when tested after 1 or 24 hours. Interestingly, STM is completely disrupted in male mice, but not in females, when subjected to a memory interference procedure. Through a combination of imaging techniques and brain manipulation approaches, we observed that female mice display increased activation of the ventral median thalamus (VMT), whereas males hyperactivate the dorsal hippocampus (dHP) when presented with 6 objects to remember. Notably, optogenetic or chemogenetic inhibition and activation of the VMT-dHP pathway in female and male mice, respectively, reverse the sex-dependent memory phenotype.
These findings highlight a subcortical-cortical circuit sensitive to biological sex differences, which regulates the amount of information spontaneously transferred from STM to LTM.

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Symposia: Esposizione alla natura e rigenerazione cognitiva, affettiva e sociale: evidenze da esperienze reali e virtuali / 281

Attività fisica e ambienti naturali: benefici psicologici e fisiologici del green exercise

Authors: Luca Laezza[1]; Alessandro Fornasiero[2]; Laura Mancini[3]; Martina Vacondio[4]; Margherita Brondino[4]; Stefano De Dominicis[5]; Margherita Pasini[4]; Federico Schena[6]; Barbara Pellegrini[7]

[1] *Dipartimento Scienze Umane, Università di Verona; Department of Nutrition, Exercise and Sports, University of Copenhagen*

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Studi suggeriscono che condurre attività fisica in ambienti naturali rispetto ad ambienti urbani offra maggiori benefici per il benessere psicologico (Gladwell et al., 2012; Wicks, 2022). Questo studio ha valutato i benefici sinergici dell'esposizione alla natura e dell'attività fisica attraverso un disegno crossover randomizzato.
Quindici partecipanti maschi (M=28; SD=5) hanno camminato per un'ora in tre diversi ambienti: naturale (N), urbano (U) e indoor (I). Questionari sono stati somministrati per indagare lo sforzo percepito, lo stato emotivo, la rigenerazione psicologica e il piacere derivato dall'attività fisica. Indici fisiologici dello stress, tra cui variabilità della frequenza cardiaca (HRV), cortisolo salivare e pressione sanguigna (BP), sono stati valutati prima e dopo l'attività.
ANOVA a misure ripetute condotte sui dati parziali hanno evidenziato un effetto significativo dell'ambiente: i partecipanti hanno riportato maggior relax, minori livelli di ansia, una maggiore rigenerazione psicologica e un maggior piacere dopo aver svolto l'attività fisica in N rispetto agli altri ambienti. A metà camminata, i partecipanti hanno percepito uno sforzo significativamente inferiore in N rispetto a I. Inoltre, N è significativamente associato ad una minore concentrazione di cortisolo e a livelli più elevati di HRV rispetto a I dopo aver svolto l'attività.
I risultati evidenziano i benefici psicologici e fisiologici di una sessione di attività fisica leggera-moderata e il maggiore potere rigenerativo della natura. Gli ambienti naturali possono favorire l'aderenza all'esercizio e aumentare i livelli di attività fisica, sostenendo uno stile di vita sano. In questo contributo verranno discussi i risultati definitivi al termine della raccolta dati.

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Symposia: Breaking into the attentional mechanisms underlying cognition via the science of pupil / 308

Navigating Complexity: Pupillometry in Infant Social Cognition Research

Author: Maria Pflüger[None]

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Eyetracking serves as a valuable method for objectively assessing early theory of mind and related social cognitive processes in preverbal infants. Recent studies have extended this approach by analyzing pupillary responses, offering deeper insights into infants' processing of others' mental states. This shift responds to critiques of traditional measures like looking time, which have been argued to be challenging to interpret and insufficiently comparable across age groups.

Importantly, incorporating pupil dilation measures in experimental studies necessitates careful selection of stimuli to prevent confounding effects such as changes in pupil size due to stimuli luminance variations or infant gaze behavior patterns, such as frequent eye movements. Selecting appropriate stimuli poses particular challenges in the investigation of social cognitive abilities, as those are usually required during social interactions entailing a lot of different information. As a consequence, when aiming for naturalistic stimuli, materials can easily become highly complex.

We conducted a study investigating 18-month-olds'ability to detect changes in adults'attitudes towards different action effects signaled through emotional expressions and verbalizations. We implemented a violation-of-expectation design measuring pupil dilation in response to expected and unexpected emotional reactions.
In my talk, I will present the insights gained from analyzing infants'pupillary responses to relatively complex video stimuli together with the specific challenges and limitations encountered during implementation and analysis of our experiment.

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Yes

Symposia: Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders / 179

The role of fronto-cerebellar networks in food challenged inhibitory control. Data from healthy normal-weight participants and patients with anorexia nervosa

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The ability to control impulses is considerably challenged by appetising food. Converging neuroimaging evidence suggests a crucial role of cerebellum in feeding and inhibitory control.
We explored the effects of different protocols of cerebellar non-invasive stimulation on food specific inhibitory performance. Moreover, we explored the dynamics of fronto-cerebellar effective connectivity in normal-weight participants and patients with anorexia nervosa.
A food Go/NoGo task involving 50% food and 50% non-food images was used. Participants were instructed to respond when they saw a food (Go trials) and refrain from responding when they saw a non-food (NoGo trials) picture or vice versa. Sham, anodal or cathodal transcranial direct current stimulation (tDCS) was applied over the left cerebellar hemisphere to modulate task performance.

Moreover, we used paired-pulse transcranial magnetic stimulation to study the functional connectivity between inferior frontal cortex (IFC), cerebellum (Cb), and the primary motor cortex (M1) as a function of corticospinal excitability, both in healthy and anorexic participants.
Our behavioural results showed a deterioration of inhibitory performance following cathodal cerebellar tDCS and a significant correlation between weight-concern psychological assessment and the percentage of omission to food Go/NoGo trials. Moreover, the corticospinal connectivity between Cb and M1 showed a clear trend to reduced motor evoked potentials in anorexic patients than in healthy participants.
Taken together, this data showed the functional involvement of cerebellum in the regulation of food-specific inhibitory control and provided new functional elements concerning the alteration of cerebellar activity in eating disorders.

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No

Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 60

Body-Specific Associations in Digital Interactions: The Role of Hand Dominance in Valence Perception

Author: Marta Maisto[1]

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The Body-Specificity Hypothesis suggests that the area around the dominant hand is perceived positively, contrasting with a negative perception around the non-dominant hand. Given the increasing interest in embodied cognition for interactive technologies, our study aimed to investigate body-specific associations in real-world settings, examining whether these extend to mainstream digital gestures like swiping. Experiments 1 and 2 involved presenting 28 valence-laden images to N=30 right-handed participants (Experiment 1) and N=30 left-handed participants (Experiment 2) on a tablet. Participants made valence judgments with each hand in separate sessions, engaging in a congruent task (swipe toward the dominant side - positive, swipe toward the non-dominant side - negative) and an incongruent task (the opposite response pattern). Following the valence judgment task, participants assessed the intensity of their responses using a 9-point Likert scale. Results indicated that right-handers (Experiment 1) were faster in the congruent condition ($p < .001$) than in the incongruent condition and showed faster responses when swiping for negative images with the non-dominant hand ($p < .001$). Left-handed participants (Experiment 2), on the other hand, did not show differences in response times but evaluated images as more positive/negative in the congruent condition ($p = .01$) compared to the incongruent. Overall, these findings support the Body-Specificity Hypothesis but also suggest it manifests with a distinctive pattern between right-handers and left-handers.

Keywords: Body Specificity; Affective valence; Embodied Cognition, Swipe, Digital devices, Response time paradigm

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Symposia: Understanding Memory: Implications from neuronal to clinical populations / 230

Recognition memory in Down syndrome: evidence from yes/no and forced-choice testing

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Recognition memory tests are pivotal in the examination of episodic memory. The paradigm commonly utilizes two primary testing formats: the yes/no and forced-choice tests. The yes/no paradigm typically involves participants being presented with a series of stimuli and later asked whether each stimulus was previously encountered (yes) or not (no). The forced-choice paradigm presents participants with pairs of stimuli, requiring them to select the stimulus that was previously encountered among distractors.
The literature suggests that yes/no recognition tests rely more on recollection compared to forced-choice tests, and that the hippocampus plays a selective role in supporting the recollection process. Individuals with Down syndrome (DS) often exhibit deficits in episodic memory, which are hippocamal related. The study examined recognition memory using yes-no and forced-choice procedures in children and adolescents with DS and typical developing controls (TD) in order to determine whether the recognition memory deficit in DS was dependent upon the type of recognition test used. We employed two distinct testing methodologies and the same stimulus materials (includin both verbal and non verbal items). The performance of 14 individuals with DS (mean chronological age = 14.5 years) was compared to that of 22 TD controls (mean chronological age = 6 years). Results revealed impairments in both recognition memory tasks in children with DS, indicating difficulties in discriminating between familiar and novel stimuli. Understanding the specific nature of episodic memory deficits can provide valuable insights into the underlying neurobiological mechanisms and interventions tailored to enhance episodic memory in individuals with DS.

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No

Symposia: Breaking into the attentional mechanisms underlying cognition via the science of pupil / 302

Using pupillometry to investigate object concepts in infancy

Author: Marlena Mayer[1]

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Since the ontogeny of object permanence was proclaimed an important developmental milestone in Piaget's seminal work on cognitive development (Piaget, 1954), much research has been dedicated to investigating the emergence of object concepts. The growing interest gave rise to a variety of methods that were developed or adapted to measure different aspects of object understanding in preverbal infants. However, sustained criticism of popular methods such as classical manual search tasks and looking-time based violation-of-expectation designs (Munakata, 1997; Charles & Rivera, 2009) has inspired the use of novel neuro- and psychophysiological measures in recent years. These include EEG (Kaufman et al., 2003; 2005), fNIRS (Baird et al., 2002), and crucially, pupillometry (Jackson & Sirois, 2009; Pätzold & Liszkowski, 2020). In this talk, I will discuss the suitability of employing pupillometric paradigms to investigate object concepts in infancy. To do so, I will draw on our own experiences in conducting a series of cross-sectional studies on object permanence, object identity, object absence and object categorization in infants aged 6 to 14 months. The talk will illustrate the unique opportunities and challenges the pupillometric approach presents in the case of studying object concepts in infancy. Implications will be considered with respect to the different experimental design stages (i.e. stimuli design, implementation, processing and analysis).

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Yes

Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 253

Exploring the role of emotion and sensorimotor expertise on memory for action sentences

Author: Silvia Serino[1]

Co-authors: Rossana Actis-Grosso [1]; Marta Maisto [1]; Paola Ricciardelli [1]; Patrizia Steca [1]

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While literature suggests that both performing congruent actions and emotional stimuli can enhance memory, their combined impact on memory for action phrases remains largely unexplored. This contribution presents and discusses recent findings from an experimental study investigating the effect of enactment encoding with emotionally charged stimuli on memory performance. Fifty-six participants encoded action sentences with different emotional connotations (negative, neutral, or positive), using either enactment or verbal-reading methods. Memory performance was assessed through immediate free recall tasks following each encoding condition and a delayed yes-no recognition task. Results indicate that enactment significantly improves memory, particularly for positively valenced items, with a notable effect on recognition memory but not on free recall performance. Additionally, preliminary data employing the same protocol with professional athletes will be presented and discussed. This aims to explore the potential role of sensorimotor expertise on memory for enacted action sentences with different emotional connotations

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Processi sensomotori e cognizione: recenti evidenze ed applicazioni

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No

Symposia: Esposizione alla natura e rigenerazione cognitiva, affettiva e sociale: evidenze da esperienze reali e virtuali / 274

Promuovere benessere e atteggiamenti pro-ambientali attraverso esperienze di contatto con la natura. Una ricerca con studenti e studentesse di scuola primaria e secondaria

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Atteggiamenti e comportamenti pro-ambientali sono di fondamentale importanza ai fini della sostenibilità (Liu & Green, 2024). Ne consegue l'importanza di promuoverli fin dall'infanzia e durante il percorso scolastico, affinché diventino disposizioni stabili, eventualmente trasmesse anche alle future generazioni (Hosany et al., 2022). Una modalità potrebbe consistere nell'introdurre, nei percorsi scolastici, percorsi di esposizione al verde. Abbiamo quindi condotto una ricerca volta a verificare la loro efficacia su dimensioni di benessere psicologico, come emozioni, vitalità, ottimismo insieme alla promozione di comportamenti pro-ambientali e connessione con l'ambiente naturale. Nello specifico, nel primo studio si è proposto di indagare se esposizioni frequenti ad ambienti naturali producano un miglioramento nelle emozioni, benessere scolastico, qualità di vita, autoefficacia percepita, vitalità e nell'ottimismo insieme ai cambiamenti nel rapporto con l'ambiente naturale in bambini/e di scuola primaria di Mestre (N=130). Dai risultati preliminari emerge come la connessione l'ambiente naturale sia associata al benessere scolastico, alla soddisfazione verso la propria vita, all'autoefficacia e con le emozioni positive percepite.
Nel secondo studio l'obiettivo era quello di comprendere se attività in contesti naturali potessero produrre dei benefici a livello psicologico ed incrementare l'attaccamento al territorio e maggior consapevolezza su tematiche ambientali in tre scuole secondarie di secondo grado nel territorio bellunese (N=98). I risultati preliminari confermano un aumento del benessere emotivo e della vitalità dopo le attività svolte in natura. La discussione si focalizza sull'importanza dell'efficacia di avvicinare le giovani generazioni al territorio ed alle tematiche relative all'ambiente e sul benessere psicologico che deriva dal contatto con la natura.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

RIGENERAZIONE ATTRAVERSO LA NATURA: EVIDENZE DA ESPERIENZE REALI E VIRTUALI

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No

Symposia: Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders / 78

Multisensory integration alterations in eating disorders.

Author: Gerardo Salvato[1]

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Individuals with eating disorders, particularly Anorexia Nervosa (AN), often experience distortions in bodily self-awareness, possibly due to difficulties integrating multisensory information. In this symposium, I will present evidence supporting the existence of this deficit underlying alterations in the corporeal self. We examined 22 women with AN alongside 22 healthy controls using the Mirror Box Illusion to assess the congruency of visual (exteroceptive), spatial (proprioceptive), and physiological (interoceptive) components when modulating the corporeal self. In healthy subjects, these components aligned, but participants with AN exhibited discrepancies, such as decreased hand temperature and enhanced sense of agency over their hand reflection, even under control conditions. I will also provide evidence that alterations in multisensory integration of the corporeal self in eating disorders extend to the acting self. AN and obesity (OB) represent extremes on the weight spectrum, both involving risks to bodily integrity, often influenced by distorted perception of internal signals. We investigated risky decision-making in AN and OB using body-related and non-body-related cues in two versions of the Balloon Analogue Risk Task (BART). Across 160 participants (AN, OB, normal-weight controls), risk propensity decreased with increasing BMI, only in the body-related task. Healthy individuals showed a correlation between risk propensity and interoception, which was absent in AN. OB participants displayed varied interactions between interoception and decision-making in both tasks. These findings contribute to understanding alterations in the corporeal and acting self in eating disorders, suggesting potential avenues for tailored interventions.

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Food challenge to neurocognitive functions: evidence from healthy and pathological populations with eating disorders.

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No

Symposia: Processi sensomotori e cognizione: recenti evidenze ed applicazioni / 467

Discussione generale

Author: Elisa Scerrati[1]

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Mini-talks: METHODOLOGY (2) / 94

How can we conceive replicability with AI-mediated experimental conditions? A position talk

Authors: Antonio Aquino[1]; Fabio Aurelio D'Asaro[2]; Marco Lezcano[2]; Vittorio Iacovella[3]; Michele Scandola[2]; Michela Vezzoli[4]

[1] *Università di Catanzaro, Dipartimento di Scienze della Salute, ITRN WORKING GROUP AI*

[2] *Università di Verona, Dipartimento di Scienze Umane, ITRN WORKING GROUP AI*

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Ensuring the replicability of scientific experiments is crucial for advancing knowledge and establishing the credibility of research findings. However, the increasing use of Artificial Intelligence (AI) to create responsive and more natural experimental conditions based on participants' verbal and behavioral responses presents new challenges for experiment replicability.
Researchers can use AI algorithms to adjust experimental parameters in real-time based on participants' responses and contextual factors, such as environmental changes, participant demographics, and unexpected variables. This approach introduces variability that cannot be monitored with traditional methods. It is not sufficient to control AI behaviour by keeping fixed algorithm parameters. Instead, a way must be found to consider the different participant's behavioural topographies that lead to the same functionality. This means considering the different response modes with the same function.
In conclusion, this talk will introduce and discuss the main aspects of AI-adapted experimental conditions, proposing potential solutions from a theoretical and philosophical perspective.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks ATTENTION (5) / 7

Therapeutic Immersion: A Single-Subject Study on Virtual Reality Multisensory Experiences for Mitigating Body Disturbance in Anorexia Nervosa

Author: Giulia Brizzi[None]

Co-authors: Margherita Boltri ; Giuseppe Riva ; Rebecca Guglielmini

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Anorexia Nervosa (AN) is a mental health condition marked by reduced food consumption, intense fear of weight gain, and distorted body experience. Virtual Reality (VR) based techniques –i.e., Body-Swapping and Mirror Exposure techniques - offer promising avenues for addressing body disturbance in AN, allowing patients to embody virtual bodies varying in size and shape. We used a single-subject experimental design (SSED) to explore the potential of virtual reality multisensory experiences for mitigating body disturbance in AN . We examine the case of a 24-year-old female hospitalized with restrictive Anorexia Nervosa, who underwent a novel body-focused VR intervention alongside the hospital's standard care. The intervention included six bi-weekly sessions, wherein the patient was immersed in a VR environment that allowed her to embody a virtual body matching a healthy weight range. Through interactions with a virtual mirror, the patient was encouraged to concentrate on the body's positive aspects and functional abilities, thinking about its significance in her past, current, and anticipated future activities (Functional Mirror Exposure). The intervention effectively reduced body dissatisfaction, negative beliefs and body misperception. These preliminary findings endorse the efficacy of using immersive, multisensory, and embodied experiences to alter body consciousness and body-self relationship. Results then support the transformative potential of VR in improving traditional approaches to assess and alter body disturbance, both in terms of efficacy and therapeutical acceptance.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks: RAGIONAMENTO / 195

Il g-factor è innato o emerge con l'esperienza? Prime evidenze dallo studio di pulcini neonati

Authors: Tommaso Feraco[1]; Maria Loconsole[1]; Beatrice Malaman[None]; Manon Skrypczuk[None]; Enrico Toffalini[None]; Lucia Regolin[None]

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Nell'uomo è stata postulata l'esistenza di un fattore generale di intelligenza, il *g-factor*, in grado di spiegare perché i punteggi ai test cognitivi siano correlati tra di loro (*positive manifold*). La *positive manifold* è stata individuata anche in bambini di sei anni, ma, data l'impossibilità di testare neonati o individui senza alcuna esperienza non è possibile trarre conclusioni sull'origine di questo fattore nella nostra specie, ovvero se sia predisposto alla nascita o appreso tramite l'esperienza. Si possono però studiare neonati di altre specie, difatti la *positive manifold* è stata individuata in esemplari adulti di alcuni animali non-umani, come scimmie e cani. Questo studio indaga la presenza della *positive manifold* in pulcini di pollo domestico (N=126) tra i 2 e i 5 giorni di vita tramite cinque test di diverse abilità (numeriche, visuo-spaziali, ricerca visiva, generalizzazione della regola, memoria) e un test di neofobia. Il pollo domestico, essendo specie precoce, è in grado di risolvere fin dalla nascita compiti che richiedono abilità cognitive. Contrariamente alla nostra ipotesi che, se vi fosse un *g-factor* innato, avremmo osservato una correlazione positiva tra le prestazioni ai diversi test, le prestazioni dei pulcini ai compiti risultano, tranne una coppia, ortogonali tra di loro e con il test di neofobia ($.01 < |r| < .25$). Sebbene tali risultati non sembrano supportare l'ipotesi innatista del *g-factor*, verranno discusse anche spiegazioni alternative, come ad esempio il ruolo delle metodologie utilizzate, la possibilità che questo emerga più tardi nello sviluppo, o che addirittura non sia presente nella specie testata.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks: EMOTIONS (2) / 23

Vuoi danzare con me? Una ricerca sull'arte e la regolazione emotiva

Author: Stella Conte[1]

Co-authors: Alessandra Busonera [1]; Gabriele Cossu [1]; Marc Aurelio Gouin [1]; Stefania Cataudella [1]

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Vuoi danzare con me? Una ricerca sull'arte e la regolazione emotiva

Stella Conte, Marc Aurelio Gouin, Gabriele Cossu, Alessandra Busonera, Stefania Cataudella
Dipartimento di Pedagogia, Psicologia e Filosofia –Università di Cagliari

La regolazione emotiva consiste nella capacità di gestire le emozioni negative con stravedrò atte alla modifica dei propri schemi interpretativi.
La ricerca si propone di verificare questa ipotesi in danzatori-performer. Nello specifico, è stata esaminata la relazione tra lo svolgimento di attività creative e la regolazione delle emozioni (DERS, Gratz & Roemer, 2004; Giromini et al., 2012; ERS-ACA, Fancourt et al., 2019) and wellbeing (OQ45.2, Lambert et al., 1996; Chiappelli et al., 2008).
244 individui hanno compilato questionari volti a valutare le variabili di interesse: 25 di loro erano Professionisti (G1), 80 erano Amatori (G2) e 139 non praticavano alcuna attività artistica (G3).
I risultati hanno mostrato che gli Amatori sono coloro che presentano una migliore regolazione emotiva per tutti i fattori Ders ($p<0,01$), ma i Professionisti hanno gestito le proprie emozioni meglio di coloro che non praticavano alcuna attività creativa.
Infine, i risultati del BF hanno mostrato elevati livelli di estroversione e accordo per G1 e G2, ma il Professionista ha mostrato livelli più elevati di apertura all'esperienza. ($p<0,01$)
Le attività artistiche creative e la danza sembrano influenzare le nostre emozioni. I dilettanti traggono beneficio dalla danza senza sviluppare dipendenza dal successo e dal pubblico e probabilmente usano la danza come un piacere e non come una forma di evitamento delle emozioni negative.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

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No

Mini-talks: ACTION & MOTION (2) / 429

A comparison of deep learning architectures for detecting motor execution from EEG data.

Author: Daniele Lozzi[1]

Co-authors: Alessandro Di Matteo [1]; Costanzo Manes [2]; Enrico Mattei [1]; Filippo Mignosi [2]; Giuseppe Placidi [3]

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Corresponding Author: daniele.lozzi@graduate.univaq.it

One of the studies of the active brain-computer interface (BCI) focuses on identifying movements from human neurophysiological signals to control external devices such as robotic arms. In the literature, EEG-based BCI is utilized to decode user's information to perform action or fill the gap from the brain to the arms in the case of illness. The purpose of this work is to understand, among the scientific literature, what the best Deep Learning (DL) architecture is for motor execution (ME) classification. Data from 105 people from the Physionet dataset and 15 subjects from the Upper Limb dataset were used. EEGnetv4, Deep4Net, and EEGITnet were used to classify EEG signals under ME for real-time BCI. A comparison of three different types of DL architecture training the network from scratch, using the data from the Physionet and Upper Limb, preprocessed in the same way to make them similar, was provided using filtering, ICA decomposition and algorithm for automatic artifacts removal. In this way, the comparison of results is not influenced by the bias introduced in each step of feature cleaning, extraction, or selection. To the best of our knowledge, no other studies have conducted a similar analysis, making it impossible to compare this achievement with others previously published in the literature. The best results were achieved from the EEGnetv4 trained

without Common Spatial Pattern transformation: 0.70 and 0.77 of accuracy for Physionet and Upper Limb dataset respectively.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks ATTENTION (5) / 30

"Regulating my anxiety worsens the safety of my driving": The Synergistic Influence of Spatial Anxiety and Self-Regulation on Driving Behavior

Author: Sergio Traficante[1]

Co-authors: Luigi Tinella [2]; Antonella Lopez [3]; Sjaan Koppel [4]; Elisabetta Ricciardi [5]; Rosa Napoletano [1]; Giuseppina Spano [1]; Andrea Bosco [1]; Alessandro Oronzo Caffò [6]

[1] *Università degli Studi di Bari Aldo Moro*

[2] *Department of Humanities, Philosophy, and Education University of Salerno*

[3] *Faculty of Law, Giustino Fortunato University, Benevento, Italy*

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Spatial Anxiety (SA) can be defined as the fear and apprehension experienced during tasks that require spatial thinking and may negatively impact the execution of daily actions. Although it has been explored in several research fields, limited research has explored the effects of SA on specific driving behaviours. In the current study, it was hypothesised that the severity of SA affects risky driving behaviours, and that this relationship is mediated by the driver's self-regulation abilities. Self-reported SA symptoms, driving self-regulation abilities, and risky driving behaviours (i.e., errors, violations, and lapses) were examined in 838 Italian drivers. Data were analysed through linear regressions and path analysis models, controlling for sociodemographic variables. The results showed the negative effects of SA on driving errors and lapses. As hypothesised, a driver's self-regulation abilities mediated the influence of SA on driving lapses, but not on errors nor violations. These findings suggest that the inclination to self-regulate the SA experienced while driving contribute to increase the occurrence of driving lapses. Showing specific pathways through which SA impacts risky driving, these results provide valuable insights for the development of 'driver-focused' road safety interventions and suggesting the implementation of training programs aimed to optimized drivers' self-regulation skills.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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No

Mini-talks: METHODOLOGY (2) / 119

The "Reading the Mind in Films" Task: a Pilot study for the Italian adaptation of a complex mental states recognition test in adults with and without Autism Spectrum Condition

Author: Raffaele Simone Scuotto[1]

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The present pilot study tested and reports the Italian adaptation of the Reading the Mind in Film test (RMF) by Golan et al. (2006) as an ecological test for assessing, in Italian adults with and without Autism Spectrum Condition (ASC), complex emotion recognition in natural settings and everyday situations. A sample of young adults with Autism Spectrum Condition (with ASC; n=22), attending a filmmaking course at a post diploma school (Scuola Futuro Lavoro) took part in the study and was compared with a control group of neurotypical university students (without ASC; n=22). All participants underwent individual testing and completed the Italian version of the Autism Questionnaire before performing the Italian version of both the RMF task and the Reading the Mind in the Eyes Test (RMET). The latter, widely used to evaluate the ability to detect what someone else is thinking or feeling from the eye region. The findings of the control group were in line with the original study demonstrating the validity and reliability of the translation and the dubbing procedure of the RMF test. However, no significant differences in performance were found between the two groups. Such a results will be discussed in terms of experience with films and video gained by the ASC group from attending the filmmaking course.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks: RAGIONAMENTO / 300

Misurare l'Autoefficacia Scolastica di studenti italiani tra sesso biologico, status socioeconomico e background migratorio

Author: Michele Zacchilli[1]

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L'Autoefficacia Scolastica (AS), ovvero la convinzione di poter raggiungere risultati positivi a scuola, è un fattore importante per l'apprendimento, la motivazione e il benessere degli studenti.
Il presente studio si basa su un campione rappresentativo di studenti italiani del secondo anno di scuola secondaria superiore (N = 26564). Un primo obiettivo è quello di stabilire le proprietà psicometriche e l'invarianza di una breve scala di misura dell'AS per gruppi di studenti con diverso Status Socio-Economico (SES), background migratorio e sesso. Una seconda finalità del presente studio

è quella d'indagare le differenze nell'AS tra questi gruppi di studenti sulla base di un'analisi delle medie latenti.
I risultati indicano l'invarianza a livello scalare della misura di AS tra i gruppi presi in considerazione. L'analisi delle medie latenti dell'AS, indica che gli studenti con SES basso mostrano un'autoefficacia minore degli studenti con SES medio e alto, mentre quest'ultimi mostrano un'autoefficacia maggiore rispetto ai coetanei con SES medio. Inoltre, gli studenti non immigrati presentano un'autoefficacia maggiore rispetto a chi ha un background migratorio, non si evidenziano differenze significative tra immigrati di diversa generazione. Infine, i maschi presentano una minore autoefficacia scolastica delle femmine.
In conclusione, questo studio mostra che la scala proposta è una misura valida e attendibile di AS. Inoltre, le differenze nelle medie latenti riscontrate tra studenti con caratteristiche diverse evidenziano l'importanza di considerare tali aspetti di background nella definizione di interventi volti a migliorare l'AS in ambito scolastico.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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No

Mini-talks: EMOTIONS (2) / 140

"Vedo quello che senti". Uno studio esplorativo per indagare la comprensione delle emozioni dei robot nei bambini sordi

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Co-authors: Daniela Conti [2]; Helene Hogsdal [3]

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La ricerca scientifica nello studio delle interazioni uomo-robot ha fatto notevoli progressi negli ultimi anni. I social robots sono stati implementati in una varietà di contesti, tra cui gli istituti scolastici, le strutture sanitarie e i centri di assistenza per anziani. Il loro utilizzo è inoltre stato valutato in diversi gruppi di popolazione. Tuttavia la ricerca è ancora scarsa sui bambini sordi. Questo è uno studio di fattibilità mirato a valutare possibili differenze tra un campione di bambini sordi ed uno di bambini udenti nell'interpretare le reazioni emotive di un social robot dopo la visione di video in cui i personaggi esprimevano emozioni. Il robot (NAO) poteva mostrare reazioni congruenti o incongruenti rispetto ai video e queste venivano espresse in entrambi i gruppi senza l'utilizzo del linguaggio. I risultati hanno indicato che non vi erano differenze tra i due gruppi di bambini tuttavia quelli che riconoscevano correttamente l'emozione del video avevano maggiori probabilità di riconoscere le reazioni emotive del robot. Anche il genere si è dimostrato un indicatore significativo infatti le bambine hanno ottenuto risultati migliori dei coetanei maschi. Sebbene non siano state riscontrate differenze importanti tra i due gruppi, questo studio di fattibilità intende gettare le basi per la ricerca futura.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Mini-talks: ACTION & MOTION (2) / 18

Investigating the Decision-Making Process Underlying Motor Responses Through Electromyography: Assessment of Online Response Control and Response Bias

Author: Saman Kamari Songhorabadi[1]

Co-authors: Simone Sulpizio [2]; Michele Scaltritti [1]

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[2] *University of Milano-Bicocca*

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Everyday tasks require a series of actions aimed at achieving goals, with decision-making processes guiding timing, execution, and adjustment of actions in response to changes. We investigated how decision-making processes relate to motor-control, and –in particular –to motor-response execution. Participants completed visual lexical decision tasks where they were instructed to categorize strings of letters as words or pseudowords by pressing buttons with their thumbs. Single-trial electromyographic (EMG) traces were used to partition reaction times (RTs) into pre-motor (PMTs) and motor times (MTs). In a first experiment, participants were directed to prioritize either speed or accuracy. This speed-accuracy tradeoff (SAT) manipulation affected both PMTs and MTs, with the latter effect hinting towards the involvement of online response control mechanisms in the overall SAT effects. Pseudowords elicited slower responses compared to words, impacting both PMTs and MTs. Crucially, there was no interaction between lexicality and SAT conditions, suggesting independent underlying mechanisms. In a second study, the proportion of pseudowords (and words) (.25, .50, or .75) was manipulated across blocks, in order to manipulate response bias, over and above the lexical status of the stimuli. Although data collection is still ongoing, the predictions point towards a reversal of the lexicality effect on MTs, when pseudowords are the most frequent stimuli, due to the reduction of the inherent uncertainty characterizing these stimuli. In general, these results provide insight into the functional specification of the decisional elements within motor-response execution as well as links connections with response monitoring and confidence.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Mini-talks ATTENTION (5) / 66

The semantics of dreams: using NLP analysis to quantify dream content and its variations across individuals

Author: Valentina Elce[1]

Co-authors: Giorgia Bontempi [1]; Bianca Pedreschi [1]; Michele Bellesi [2]; Giacomo Handjaras [1]; Giulio Bernardi [1]

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The content of dreams appears to reflect the sleeper's experiences and concerns, but also their psychophysical well-being. We implemented Natural Language Processing (NLP) tools for the quantitative and reproducible analysis of dream content to investigate dream changes as a function of age and sex in a large cohort of participants.

Two-hundred healthy Italian individuals (87M, 18-70y) wore an actigraph and recorded their last dream experience each morning upon awakening for two weeks (1,620 reports). We trained an LSTM neural network on a subset of reports scored by four raters on 15 features, including perceptual contents, affective experience, and spatial-temporal features. The algorithm was used to predict those dimensions in the whole dataset. Moreover, we identified recurrent dream topics by measuring the cumulative frequency of semantically-related words within reports. Linear mixed-effect models were used to assess the correlation between dream features and demographic variables ($q < 0.05$, FDR correction).

We identified a negative correlation between age and the presence of social interactions and auditory experiences in dreams. Age positively correlated with visual content and spatial settings. We identified 21 recurrent topics, including work-related (20.5%) and educational (18.5%) contents, negatively-valenced affective experiences (18.5%), and animals (17.0%). References to violence and aggression increased in men and tended to decrease in women as a function of age.

NLP approaches allow for a quantitative, objective, and reproducible analysis of dream reports. We demonstrated significant dream content changes across the lifespan and as a function of sex, paving the way for further studies in clinical populations.

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Mini-talks: EMOTIONS (2) / 146

Linking Social Reward Responsiveness and Affective Responses to the Social Environment: an Ecological Momentary Assessment Study

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Social support is a key predictor of well-being, but not everyone experiences mental health benefits from receiving it. However, given that a growing number of interventions are based on social support, it is crucial to identify features that make individuals more likely to benefit from social ties. Emerging evidence suggests that neural responses to positive social feedback (i.e., social reward) might relate to individual differences in social functioning, but potential mechanisms linking these neural responses to psychological outcomes are yet unclear. This study examined whether neural correlates of social reward processing, indexed by the reward positivity (RewP), relate to individuals' affective experience following self-reported real-world positive social support events. To this aim, 193 university students (71 % females) underwent an EEG assessment during the Island Getaway task

and completed a 10-day ecological momentary assessment where participants reported their positive and negative affect (PA, NA) nine times a day and the count of daily positive and negative events. Experiencing a higher number of social support positive events was associated with higher PA. The RewP moderated this association, such that individuals with greater neural response to social feedback at baseline had a more positive association between social support positive events count and PA. Individual differences in the RewP to social feedback might be one indicator of the likelihood of experiencing positive affect when receiving social support.

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Mini-talks: RAGIONAMENTO / 358

Communication of synergistic health risks

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Many non-communicable diseases result from combinations of risk factors, which sometimes interact to produce risks going beyond their sum, called *synergistic risks*. For instance, smoking and alcohol consumption interact synergistically to increase the risk of head and neck cancers. Our previous studies show that only a minority of people judge synergistic risks for non-communicable diseases as such, which reveals the need of improving awareness and understanding of these risks through effective communication. Existing online communications usually inform about the existence of a synergistic relationship, explain briefly what it means and illustrate it with data on the increase in risk (stating the risk is "X-times higher"). Scientific evidence on how to best communicate synergistic risks is almost non-existent. There is just limited evidence that providing probability information (in natural frequency format) and explaining the biological mechanism behind the synergy improve judgements about synergistic health risks. The aim of our research is to help fill this gap in the literature by providing new empirical evidence on the ways of explaining synergistic health risks to people. In our study, we test whether (a) explaining what a synergistic relationship means, (b) explaining the biological mechanism behind the synergy, or (c) providing the commonly-used relative risk information, improve people's judgements of synergistic risks. The results will be of both theoretical and practical relevance, as they can shed light on the mechanism which best demonstrates the idea of a synergistic risk, and can inform the design of real-world communications on synergistic health risks for non-communicable diseases.

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Mini-talks: METHODOLOGY (2) / 206

On generalizing the use of raters threshold in the estimation of the agreement among multiple raters

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Classification tasks where raters have to classify objects into predefined classes have been gaining popularity in science. Therefore, accuracy and reliability of classification are two necessary conditions. Any classification process is partly based on an evidence-based evaluation and partly on the subjective evaluation of the rater. This last component is crucial for the reliability of the classification. Traditional indexes used to estimate inter-rater agreement typically count the number of observed agreements and correct them by removing chance agreements. In a recent paper Nucci and colleagues introduced a methodology for improving the estimation of interrater agreement in a classification task in the case of two independent raters. Their contribution is based on the definition the Belonging Measure, and the Belonging Threshold of the raters. In this research we study, by means of a number of Monte Carlo simulation studies, the performance of the new methodology in estimating the agreement among multiple raters. Results confirm the accuracy of the new methodology even in the case of multiple raters. Moreover, it is shown that when differences among the Belonging Thresholds increase, traditional inter-rater agreement indexes are biased, while this is not the case for the indexes computed using the new methodology. Future research perspectives are then discussed.

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Mini-talks: ACTION & MOTION (2) / 272

How to measure climate change worry in adolescents? Analyzing the adequacy of a dichotomous response scale for the Climate Change Worry Scale through Item Response Theory

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Climate change worry (CCW) is a motivating factor for the implementation of pro-environmental behaviors, especially among youth. Consequently, it is particularly relevant to identify the best item response scale to assess this trait among adolescents to plan preventive interventions. We focused on the Climate Change Worry Scale (CCWS), a unidimensional instrument with ten items having a 5-point ordered frequency response scale. The CCWS has been developed for adults and validated with adolescents by applying Classical Theory of Test. We employed Item Response Theory (IRT) to test the hypothesis that a dichotomous response scale (No/Yes) would be more adequate than the original polytomous scale (from Never to Always). Our prediction was that CCW indicators among adolescents can be assessed for being present or absent more than as a continuum in terms of frequency. Participants were 1846 adolescents (58% male; Mage = 16.37 years, SD = 1.25). All the items, except for item 1, did not fit to the Graded Response Model, while all the items fitted under the 2PL model for dichotomous items. When referring to this model, Test Information Function showed high levels of information, especially at low levels of trait. Thus, CCWS items resulted to be more adequate to discriminate adolescents who are not worried about climate change, more than

assessing the continuum of CCWS, as expected by using a 5-point response scale. Further studies are needed to better analyze the functioning of a dichotomous response scale for the CCWS.

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Mini-talks: EMOTIONS (2) / 259

The network structure of self-esteem: Gender, age, and sociocultural differences through network techniques

Author: Laura Girelli[1]

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Self-esteem, a fundamental aspect of an individual's perception of their own worth, has been extensively examined in psychological research. Based on a large and representative sample of 47,974 participants (mean age: 26.59 years; SD: 12.3; 61% female), and using the Rosenberg Self-Esteem Scale, one of the most widely used measures of self-esteem in psychological research, this study takes a novel approach to examine the structure of self-esteem. Utilizing network analysis techniques, our study focuses on the complex interactions among specific components of self-esteem, while also exploring differences in self-esteem across gender, age groups, and sociocultural contexts. Diverging from traditional methods, we employ Exploratory Graph Analysis (EGA) to uncover the underlying structure of self-esteem without presupposing the existence of latent constructs. Moreover, we utilize the Network Comparison Test (NCT), a resampling-based permutation testing method, to identify variations in the network structures across diverse populations. Our findings shed light on the subtle dynamics of self-esteem and its expressions within different groups, offering valuable insights for understanding this complex psychological construct.

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Mini-talks ATTENTION (5) / 70

Age-related decline in spatial orienting of attention in physiological aging

Author: Tiziana Pedale[1]

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Attention is a multifaceted process that involves several components, including alerting, orienting, and conflict resolution. These components have been extensively studied using the Attention Network Test (ANT), also to characterize attentional decline with physiological aging. However, there are several inconsistencies in the literature regarding which components are most affected by aging. Here, we addressed this issue by administering the ANT to 60 healthy participants ranging in age from 62 to 90 years. Using a multivariate regression model, we asked whether increasing participant age predicts alerting, orienting, and conflict, while controlling for general participant performance in terms of both reaction times and accuracy. For two of the three attentional components, the results showed a general and age-insensitive decline, i.e., an abolishment of the alerting effect and a large conflict effect, regardless of participants'age. In contrast, the amplitude of spatial orienting of attention was linearly predicted by increasing age. More focused analyses revealed a selective increase in the difficulty of shifting attention from the initial (central) to the target (peripheral) location as a function of increasing participant age. Ultimately, these findings highlight the age-related difficulty in directing endogenous attention to task-relevant locations.

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Mini-talks: RAGIONAMENTO / 360

Tiny dictators: understanding altruism in young children

Authors: Marco Marini[1]; Sebastiano Munini[2]; Michela Carlino[3]; Fabio Paglieri[4]

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Fairness and altruism are fundamental aspects of human social behavior, often observed across various contexts and age groups. Previous research has suggested that time constraints can influence decision-making processes, particularly in scenarios involving resource allocation. This study investigates the developmental origins of fairness in preschool children (aged 4 to 5) through a modified dictator game, examining their responses under time pressure. Children from six nursery schools (N=115) participated in a within-between subject design study, where children engaged in both "give"and "take"versions of the game. In the "Give"condition, children decided how many stickers to donate, while in the "Take"condition, they chose how many stickers to take from another child' s endowment. Time pressure was introduced, prompting children to reallocate resources within a specified time frame, with the penalty of receiving nothing if they failed to do so. Results indicate that initial resource allocation significantly influenced subsequent sticker sharing, with children in the "Give"condition displaying less generosity than those in the "Take"condition. Notably, time pressure consistently led to increased sharing across both allocation conditions. These findings highlight the early emergence of a sense of fairness and altruism in preschool-aged children, irrespective of endowment or status quo effects. The study contributes valuable insights into the interplay between contextual factors and prosocial decision-making in early childhood. The modified dictator game employed in this study serves as a valuable tool for investigating the development fairness and altruism, shedding light on the intricate interplay between economic games and prosocial tendencies.

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Mini-talks: METHODOLOGY (2) / 220

La validazione preliminare della scala ARC (Assessment of Recovery Capital) in un campione clinico italiano con disturbo d'uso di sostanze

Author: Elisa Zamagni[1]

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Obiettivi: L'espressione Recovery Capital (RC) può essere definita come l'insieme delle risorse interne ed esterne che facilitano la ripresa da un disturbo da uso di sostanze e rappresenta un costrutto indispensabile per valutare i progressi dei pazienti nei percorsi di recupero. La scala ARC (The Assessment of Recovery Capital) è un questionario breve e di facile somministrazione usato per rilevare la RC. Esso può essere utilizzato come misura di outcome nel monitoraggio dei pazienti dipendenti da sostanze durante ed al termine del trattamento. Lo studio ha avuto l'obiettivo di tradurre e validare l'ARC in un campione clinico italiano.
Metodi: Il campione è costituito da pazienti in trattamento ambulatoriale. Sono stati somministrati la versione italiana della scala ARC, le versioni italiane dei questionari WHOQOL-BREF (WHO, 1998) e del Treatment Outcome Profile (TOP).
Risultati: La scala ARC risulta attendibile e valida. Dalle analisi risulta che l'alpha di Cronbach è pari 0.90. Le correlazioni tra lo score totale dell'ARC e le sottoscale del WHOQOL-BREF (WHO, 1998) e del TOP oscillano tra .43 to .71. Le medie dell'ARC differiscono significativamente in base alla presenza o meno di un'abitazione stabile (p=.003), attività significative (p=.014), sintomi d'astinenza (p=.001), e comorbidità (p=.009).
Conclusioni: Le analisi mostrano che la scala ARC è uno strumento valido ed attendibile per misurare la recovery capital. La diffusione del presente questionario nei servizi pubblici per le dipendenze potrebbe costituire un progresso significativo nel campo del recupero dalle dipendenze, in linea con l'emergente recovery-oriented approach per la cura e il trattamento.

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Mini-talks: ACTION & MOTION (2) / 293

Who turned the light on? How avatar's hand tracking modulates sense of agency in virtual reality.

Author: Marika Mariano[1]

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Virtual Reality (VR) allows the implementation of innovative rehabilitation, offering greater ecological validity in the context of motor functions. To be effective, these treatments should foster virtual embodiment, the process of becoming rooted in the virtual body, including a sense of agency towards the avatar's movements.
Here, we investigated the different dimensions of the agency experience in VR (i.e., explicit and implicit), manipulating the avatar's interactive capabilities (i.e., still vs. moving avatar).

We tested 70 healthy adult participants in a VR setting while performing active or passive movements for turning on, after a variable delay, a lightbulb.
Before the experiment, half of the participants could see their virtual hands move consistently with their real hand movements (group M+), whereas the other half saw their virtual hands stationary on a table (group M-).
Explicit and implicit sense of agency was assessed (considering the intentional binding as an implicit index).

Our results show that participants experience an explicit sense of agency (i.e., higher agency ratings in active trials), similarly in both VR scenarios (M+ and M-). This phenomenon is similarly experienced at the implicit level (i.e., significant intentional binding effect for temporally contingent outcomes), but only if real movements are mirrored by an avatar's movements (M+ scenario).

These results confirm the dissociation between implicit and explicit processing frequently seen in psychology and suggest the importance of being able to represent our movements in a virtual reality environment through the presence of an avatar whose movements simulate exactly the participants' ones.

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Mini-talks ATTENTION (5) / 226

Uncovering ChatGPT's Narrative Identity through a Psycholinguistic Perspective.

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The present study investigates ChatGPT's self-description and world-description in both present and future contexts. A corpus of texts produced by ChatGPT was analyzed through Linguistic Inquiry and Word Count (LIWC) to detect the linguistic markers indicating self-concept, self-reflection, cognitive, emotional and social processes.
Repeated measures ANOVA unveiled significant differences. In self-description ChatGPT demonstrates a distinct sense of self, characterized by the prevalent use of first-person singular pronoun, authenticity, narrative-oriented mode of thinking (in contrast with a more analytical stance towards the world). It engages in deeper introspection and reasoning about its own identity compared to its perceptions of the external world. Unlike humans, ChatGPT displays increased confidence when projecting its identity into the future. Self-descriptions show heightened emotional expression, particularly in future-oriented contexts. Pro-social behaviour and evident social references are more frequent in self-description in the present. The prevalent use of first-person plural pronouns in future self-description suggests a perception of future identity as more interconnected with others.
These findings shed light on ChatGPT's description of itself and the world in two temporal contexts, providing valuable insights into the simulated cognitive and emotional capabilities of Artificial Intelligence.

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Mini-talks: RAGIONAMENTO / 375

Scarcity and borrowing behavior: from opening a new line of credit to repayment strategy

Authors: Marta Caserotti[1]; Paolo Girardi[2]; Roberta Sellaro[1]; Alessandra Tasso[3]; Teresa Gavaruzzi[4]; Caroline Roux[5]; Lorella Lotto[1]; Enrico Rubaltelli[1]

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Literature suggests that people facing financial scarcity - the perception of insufficient economic resources to meet their needs - often show disadvantageous behaviors, such as increased willingness to borrow money (WTB). Two observational studies based on representative Italian samples investigated the role of psychological ownership of borrowed money (POBM), perceived risk of indebtedness in borrowing decisions (Study1, N=1,997) and repayment strategies during economic hardship (Study2, N=938). An Hurdle model (Study1) and a beta regression (Study2) were performed due to the non-normal distribution of the dependent variables.
Study1 confirmed our hypothesis that participants in the scarcity (vs. control) condition were more likely to incur debt (OR: 1.43, p=.003) and had greater WTB (IRR: 1.10, p=.039). Further, a higher (vs. lower) POBM predicted both the loan (OR: 1.51, p<.001) and the WTB (IRR: 1.21, p<.001). Conversely, higher (vs. lower) perceived risk was associated with a reduced probability to incur debt (OR: 0.80, p=.003) and a lower WTB (IRR: 0.80, p=<.001).
Study2 showed that participants in scarcity (vs. control) condition were slightly more willing to refinance (namely to open a new line of credit) instead of renegotiating (OR: .69, p=0.06), although those experiencing less economic hardship were more willing to renegotiate (OR: 1.93, p=.04). High (vs. low) POBM was associated with a greater willingness to refinance (ps<0.05) while high (vs. low) debt risk perception was associated with a greater willingness to renegotiate (OR:1.55, p=.002).

Results expand the literature on the role of financial scarcity on indebtedness, deepening the role of psychological aspects involved.

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Mini-talks: METHODOLOGY (2) / 246

Validazione italiana della Drexel Defusion Scale (DDS) in un campione di persone con sclerosi multipla

Author: Ambra Mara Giovannetti[1]

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Background ed obiettivi: La Drexel Defusion Scale (DDS) è uno strumento valido ed attendibile, utilizzato per misurare la defusione, che è l'abilità di prendere le distanze dai pensieri disfunzionali piuttosto che considerarli come veri e reali. Questo è un aspetto legato alla flessibilità, concetto chiave nella cornice dell'Acceptance and Commitment Therapy (ACT), che è un framework psicologico per i cambiamenti comportamentali. Lo scopo del presente lavoro è quello di validare la versione italiana della scala DDS in pazienti con sclerosi multipla (SM).
Metodi: I pazienti coinvolti hanno partecipato ad una survey e, nello specifico, hanno compilato la versione italiana della DDS ed altri strumenti che misurano la flessibilità psicologica, la salute mentale (ansia, depressione), la resilienza e la qualità della vita associata alla salute (HRQoL).
Risultati: Al presente studio hanno partecipato 251 pazienti con sclerosi multipla (76.1% donne, con età media di 41.8 ± 10 anni), in prevalenza di tipo recidivante-remittente (92%). La scala DDS mostra una buona validità convergente (con correlazioni che oscillano tra .22 e .57 con le altre scale) e una buona attendibilità (α=0.85). Inoltre, la scala risulta composta da un'unica dimensione, come nella versione originaria Inglese.
Conclusioni: Le analisi rivelano che il DDS è uno strumento valido ed attendibile per misurare la defusione negli individui italiani con sclerosi multipla. Tale studio mostra risultati significativi sia per la ricerca scientifica sia per la pratica clinica svolta all'interno della cornice ACT.

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Mini-talks: EMOTIONS (2) / 260

Modulazione dell'arousal legato al cibo: validazione di una tecnica di intervento breve

Authors: Silvia Francesca Maria Pizzoli[1]; Elisa Rabarbari[1]; Elisa Scerrati[2]; Daniela Villani[2]; Giuseppe Riva[3]; Claudia Repetto[2]

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L'esposizione a stimoli alimentari induce una complessa reazione psicofisiologica che modella i comportamenti di alimentazione ed è potenzialmente influenzata dalla modalità di rappresentazione del cibo (immagini o parole) e dall'associazione con esperienze autobiografiche.
Il presente studio pilota, con raccolta dati in corso, mira a confrontare l'efficacia di un intervento breve di gestione dell'arousal con una sessione psico-educativa su un campione non clinico. I partecipanti vengono esposti a rappresentazioni modali e amodali di cibi e assegnati casualmente ad una di due condizioni: 1) tecnica di gestione dell'arousal basata su respiro, consapevolezza e metacognizione, 2) tecnica di psicoeducazione sulle reazioni immediate di fronte ai cibi. Inizialmente, i partecipanti compilano un questionario self report sulle proprie abitudini alimentari (Addiction-like Eating Behaviors Scale), valutano su una scala visiva analogica valenza e arousal associati ad ogni stimolo e ne selezionano uno, che sia attivante e collegato a un ricordo autobiografico e che sarà poi il target della tecnica. I partecipanti valutano poi la propria condizione emotiva sulle dimensioni di valenza, arousal e controllo percepito (Self Assessment Manikin) prima e dopo la tecnica. Infine, rispondono a domande aperte sull'esperienza fatta. Durante l'intera sessione vengono inoltre registrati conduttanza cutanea e battito cardiaco. Si ipotizza che la tecnica di gestione dell'arousal riduca l'attivazione fisiologica più efficacemente rispetto alla psico-educazione e che attivazione e valenza attribuite alle immagini rispetto alle parole siano maggiori.
In conclusione, lo studio contribuirà a comprendere meglio i meccanismi di reazione agli stimoli alimentari e a costruire potenziali approcci terapeutici.

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Mini-talks: ACTION & MOTION (2) / 324

Interoception, pregnancy and the categorization of abstract and concrete concepts

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A growing body of research is focusing on the role of interoception –the sensing of the physiological condition of the body - in cognitive processes. Here, we asked whether the physiological changes experienced by women during pregnancy might affect conceptual representation, particularly of abstract concepts (for whom the interoceptive dimension seems particularly relevant).

A sample of 40 women (37 controls and 3 pregnant women) performed the Heartbeat Counting Task (a measure of interoceptive accuracy) and an 'interoceptive-exteroceptive' categorization task of abstract and concrete concepts varied for their grounding in interoceptive and sensorimotor experiences (emotional, philosophical, natural, artefact). Participants responded by moving the computer mouse.

Overall, concrete-artefact concepts were categorized faster and more correctly (as exteroceptive) than the other concepts, suggesting that they clearly convey exteroceptive features. Differently, concrete-natural concepts elicit interoceptive features to a greater extent with slow responses, a high number of (interoceptive) misclassification, and movement trajectories attracted by the competing (interoceptive) response option. Interoception confirms to be particularly relevant for abstract-emotional concepts, as indicated by the lower chance of misclassifying them compared to abstract-philosophical ones.

Results on group differences (to be considered preliminary as the reduced size of the pregnant group) indicates no major differences in the speed and accuracy of interoceptive-exteroceptive categorization of the concepts considered. Enhanced 'interoceptive attraction' of the trajectories' of concrete-natural concepts is observed in the pregnant group, which suggests a greater relevance of the interoceptive dimension in this population (to be confirmed once the study group has been expanded).

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Mini-talks ATTENTION (5) / 289

Anortoscopia: uno strumento riscoperto per lo studio dei bias rappresentazionali

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In questo lavoro abbiamo studiato lo pseudoneglect (i.e., bias attenzionale fisiologico verso l'emispazio sinistro) mediante l'anortoscopia.
L'anortoscopia è una tecnica di presentazione visiva di un'immagine per sezioni successive. Nell' anortoscopia "statica"uno stimolo viene fatto scorrere dietro una fessura fissa al centro dello schermo: l'impressione di forma globale dello stimolo è possibile integrando temporalmente e spazialmente le diverse porzioni dell'immagine in un buffer di memoria post-retinico.
Recenti studi dimostrano come l'anortoscopia non impedisca il riconoscimento di stimoli complessi,

come volti, ma ne altera la percezione e la manifestazione di asimmetrie percettive/rappresentazionali, come accade nel Left-Face-Bias.
Se lo pseudoneglect è la conseguenza di asimmetrie cerebrali nell'ancoraggio/orientamento dell'attenzione spaziale verso sinistra, allora questo paradigma sperimentale potrebbe rispondere alla domanda se lo pseudoneglect esista veramente come fenomeno attenzionale/percettivo in quanto l' anortoscopia "impedisce"di dirigere volontariamente l'attenzione verso un lato specifico dello spazio. 64 matrici di oggetti 2x6 sono state presentate in "anortoscopia"o in "visione libera", il partecipante aveva il compito di rievocare tutti gli oggetti che ricordava per ogni trial.
I risultati mostrano la presenza di pseudoneglect con un maggior numero di oggetti ricordati della metà sinistra della matrice rispetto a quella destra solo nella condizione "visione libera". Nella condizione "anortoscopia"non è emerso alcun effetto posizionale o direzionale di scansione. Sebbene non si possa conoscere, allo stato attuale, a che livello di elaborazione la percezione anortoscopica sia intervenuta sulla manifestazione del bias, i dati suggeriscono che lo pseudoneglect sia un fenomeno potenzialmente modulabile dal compito e dal carico di working memory.

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Mini-talks: RAGIONAMENTO / 383

Exploring the relationship between cognitive abilities and olfactory function in younger adults

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The relationship between cognitive abilities and olfactory function (FO) has been a subject of great research interest. Previous studies highlighted that both olfactory and specific cognitive processes are regulated by the orbitofrontal cortex, and suggested associations between declines in cognitive abilities and alterations in olfactory perception. However, the majority of investigations focused on specific populations (i.e. older adults, and individuals with cognitive impairment), and primarily relied on the only identification test to assess olfaction, which is known to be partially confounded by cognitive and cultural factors. In light of these premises, there is a shared need to further explore these domains in a cohort of young adults devoid of cognitive impairment signs to determine the value of olfactory testing as a possible predictor of cognitive impairment in young and healthy individuals. For this reason, we investigated the relationship between olfaction and cognitive abilities and explored the possible role of gender differences in a population of younger adults. To evaluate OF we used the Sniffin'Sticks Extended version (Threshold, Discrimination, and Identification), while for cognitive abilities we used the ICAR16 test (investigating four dimensions: verbal reasoning, letter and number series, matrix reasoning, and three-dimensional rotation). Preliminary results did not support previous research findings, indicating a lack of statistically significant correlation between OF and cognitive abilities in younger adults, and no influence of gender. Further studies are pivotal to clarify the nature of this relationship.

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Mini-talks: METHODOLOGY (2) / 270

Costs and Benefits of Item Reduction: The Abridgment of the Emotion Regulation Questionnaire (ERQ)

Authors: Giusy Danila Valenti[1]; Giuliana Nasonte[2]; Rossella Bottaro[3]; Palmira Faraci[3]

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Shortening instruments is a highly required procedure, as short scales may be advantageous over their lengthier counterparts, especially when time and resources are constrained. However, these abbreviated forms may be weaker than their original versions for both content coverage and psychometric robustness. Also, the abridgment of measures often suffers from methodological strictness, and the potential drawbacks of the shortened scales are rarely reported. This study aims to describe the process of scale shortening, emphasizing the potential costs and benefits in the context of a balance between time-resource savings and potential compromises in validity and reliability. We selected the Emotion Regulation Questionnaire (ERQ) for this condensation process, involving a sample of 459 participants. Item reduction was driven by an intent to preserve the construct' s content breadth and scale's psychometric quality. Our results supported a two-factor structure (Cognitive Reappraisal and Expressive Suppression), $\chi 2(8) = 11.357$ ns, CFI = .995, TLI = .990, RMSEA = .030 (.000-.067), SRMR =.031, and three items were selected for each subscale. Both factors showed satisfactory levels of reliability (α and $\omega > .710$). We tested a latent variable model on an independent sample to evaluate the relations between these two emotion strategies and depression, anxiety, and stress: Cognitive Reappraisal reported negative associations, whereas Expressive Suppression showed associations in the opposite direction. The ERQ-S, as a brief version of the original ERQ, offers potential benefits, as it effectively assesses the two emotion regulation strategies, with a reduced number of items, thereby enhancing its utility in research and practice.

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Mini-talks: EMOTIONS (2) / 403

Prestazioni cognitive e isolamento prolungato a bordo di navi mercantili: il ruolo protettivo dell'intelligenza emotiva

Author: Clarissa Cricenti[1]

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Nonostante le forti somiglianze tra ambiente marittimo mercantile e ambienti comunemente definiti "ICE"(isolati e confinati), con particolare riferimento alla condizione di isolamento, il tema dell'adattamento è stato in gran parte trascurato nella popolazione marittima. Tuttavia, la nave rappresenta

non solo il luogo di lavoro, ma anche lo spazio vitale dell'individuo per mesi e mesi, motivo che ha portato gli stessi marittimi a definire la nave come una prigione (Exarchopoulos et al., 2018). Queste considerazioni pongono la necessità di incrementare lo studio dei processi emotivi e cognitivi associati all'isolamento dei marittimi, soprattutto se si considera che la maggior parte degli incidenti in acque nazionali e internazionali avvengono a causa di fattori umani, come la distrazione. In linea con l'approccio teorico "Person-Enviroment-Fit"(Werner et al., 2002), che considera l'adattamento come il risultato dell'interazione tra individuo (fattori intrinseci) e ambiente (fattori estrinseci) è stato condotto uno studio per esaminare il ruolo dell'intelligenza emotiva nel mitigare gli effetti dell' isolamento e del confinamento sulle prestazioni cognitive, in condizione di isolamento prolungato a bordo di navi mercantili, tenendo sotto controllo altri fattori stressanti e mitiganti. In particolare, a un campione di marittimi è stato somministrato un questionario per la valutazione di aspetti cognitivi (e.g., attenzione), affettivi (e.g., intelligenza emotiva) e psicofisiologici (e.g., qualità del sonno) e dei task comportamentali per la valutazione delle prestazioni cognitive (e.g., Emotional Stroop Task). I risultati dello studio potrebbero contribuire a colmare lo specifico gap in letteratura e avere importanti implicazioni per la progettazione di interventi mirati.

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Mini-talks: ACTION & MOTION (2) / 340

Come l'osservazione di azioni può influire sulla velocità con cui ragioniamo

Authors: Ivan Nabil Ras[None]; Monica Bucciarelli[1]; Walter Schaeken[None]; Francesco Iani[2]

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Studi sul ragionamento hanno rilevato che le rappresentazioni mentali implicate nel ragionamento spaziale sono ricche di componenti motorie. Parallelamente, studi sull'osservazione delle azioni hanno rilevato attivazioni specifiche del sistema motorio dell'osservatore. In uno studio, abbiamo quindi indagato se e quando l'osservazione di azioni che comportano uno sforzo fisico possa modulare il ragionamento spaziale. Metà dei partecipanti (gruppo scatole), subito dopo aver osservato un video in cui un attore solleva scatole pesanti (condizione pesante) o leggere (condizione leggera), risolvevano problemi di ragionamento spaziale riguardanti la disposizione di alcune scatole nello spazio. L'altra metà dei partecipanti (gruppo pesi), subito dopo aver osservato un video in cui un attore solleva dei pesi pesanti (condizione pesante) o leggeri (condizione leggera), svolgevano gli stessi compiti di ragionamento spaziale riguardanti la disposizione di scatole. L'ipotesi era che i tempi di risposta dei partecipanti nella condizione pesante dovessero essere più lunghi rispetto ai tempi di risposta dei partecipanti nella condizione leggera nel gruppo scatole ma non nel gruppo pesi, in cui non vi era congruenza tra l'oggetto presente nell'azione osservata e quella immaginata; la manipolazione sperimentale dovrebbe indurre nei primi la costruzione di un modello mentale cinematico con le medesime caratteristiche cinematiche dell'azione osservata nel video. I risultati dell' esperimento hanno confermato le previsioni, suggerendo che i modelli mentali che sottendono al ragionamento spaziale siano influenzati dall'osservazione dell'azione e solo quando vi è congruenza di contenuti tra l'informazione motoria precedente e il compito di ragionamento spaziale.

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Mini-talks: EMOTIONS (2) / 425

Impatto di un programma multidisciplinare di educazione nutrizionale sull'autoregolazione alimentare e sul BMI in un campione adolescenziale

Authors: Stefano Corrado[1]; Stefania Mancone[2]; Beatrice Tosti[3]; Giuseppe Spica[2]; Pierluigi Diotaiuti[2]

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Questo studio presenta i risultati di un intervento di alfabetizzazione sanitaria, condotto su studenti adolescenti, avente lo scopo di promuovere abitudini alimentari sane. L'intervento mirava a potenziare la conoscenza degli adolescenti sulla nutrizione, a sviluppare abilità di autoregolazione e, in definitiva, a migliorare la loro salute complessiva, incluso l'Indice di Massa Corporea (BMI). Attraverso un approccio multicomponente che combinava apprendimento teorico con attività pratiche e l'integrazione di strumenti digitali come l'app MyFitnessPal, lo studio ha puntato a miglioramenti nell'alfabetizzazione alimentare, che comprende la conoscenza nutrizionale, le competenze nell'interpretazione delle etichette alimentari e le abilità culinarie. L'intervento è stato strutturato mediante una serie di laboratori educativi e sessioni interattive, facilitati da professionisti esperti in nutrizione e psicologi. Gli strumenti di valutazione includevano la Nutritional Literacy Scale, la Emotional Eating Scale, il Tempest Self-Regulation Questionnaire for Eating, e ulteriori questionari ad hoc per tracciare le modifiche nelle abitudini alimentari. Una caratteristica distintiva del programma è stato l'uso di strumenti digitali per aumentare il coinvolgimento e permettere l'applicazione pratica dei concetti appresi attraverso il monitoraggio degli alimenti e delle attività. I risultati hanno mostrato esiti positivi in termini di aumento della conoscenza alimentare e miglioramento delle abitudini dietetiche tra i partecipanti. L'integrazione delle tecnologie digitali e un focus sulle strategie di autoregolazione sono stati identificati come promettenti approcci per future ricerche e prassi educative, rafforzando l'appello per investimenti innovativi nell'educazione alimentare e nella promozione della salute tra i giovani.

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Mini-talks ATTENTION (5) / 320

Interplay between hypertension and heart rate variability in cognitive functions

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Until now it has been difficult to examine the cognitive decline related to hypertension and to identify predictive variables of the progression to cognitive impairment in people with hypertension. With renaissance of heart rate variability as a marker of autonomic functionality, a series of researchers

have underlined its role in cognitive functions. In line with evidence about autonomic dysfunctions in patients with hypertension this study aims to investigate whether the autonomic response can serve as a marker for the development of cognitive impairment in hypertensives. Specifically, the role of HRV as an index of autonomic functions was tested to understand the interplay between heart rate variability and blood pressure and to determine whether there is a synergistic role in predict cognitive performance. We adopt a neuropsychological battery and measure resting HRV in people with and without hypertension. The results evidenced the twisting association between the autonomic and cardiovascular systems on cognitive performance. A continuum from hypertension with autonomic dysfunctions to normotension without autonomic dysfunctions was evidenced. In particular, a pattern characterized by high hypertension and low HRV could be considered as a biomarker for the development of cognitive impairment. Identifying novel vascular biomarkers of cognitive impairment may facilitate an earlier evaluation of cognitive decline in preclinical phases. Surely further studies are needed to understand this association better.

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Mini-talks: METHODOLOGY (2) / 271

Oltre le parole: riflessioni metodologiche sullo sviluppo di stimoli visivi e sonori

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Molti strumenti utilizzati per misurare costrutti in psicologia utilizzano stimoli verbali, spesso self-report, che si basano sulla capacità delle persone di rispondere in modo preciso ed accurato ad una serie di domande o affermazioni su di sé. Tali misure, sono soggette ad alcuni bias tra cui la desiderabilità sociale, limiti nella capacità introspettiva dei rispondenti, e l'inaccessibilità a persone che non possiedono sufficienti competenze linguistiche (Zogmaister & Castelli, 2006). Alcuni strumenti psicologici utilizzano, al contrario, stimoli non verbali, ad esempio stimoli visivi (Crone et al., 2018; Dawell et al, 2022) e, meno comunemente, sonori (Strauss et al., 2024). Le sfide nella creazione e validazione di tali strumenti sono molte e non sempre esistono linee guida condivise o riflessioni metodologiche specifiche. Il presente contributo vuole aprire una riflessione sul processo di costruzione e validazione di strumenti di misura che utilizzano linguaggi diversi da quello verbale. A tal proposito, come esempio, verrà presentato un progetto di ricerca per sviluppare stimoli visivi e sonori per misurare il concetto di significato nella vita. Nello specifico, si illustrerà la prima fase di operazionalizzazione, che ha previsto la partecipazione di esperti artisti e musicisti a sei workshop in cui, a partire dalla definizione verbale del costrutto, si è proceduto all'identificazione delle caratteristiche tecniche di stimoli sonori e visivi per rilevare le componenti di base del significato nella vita. A partire da tale progetto si proporranno delle riflessioni relativamente alle sfide aperte (per es. competenze sull'operazionalizzazione; validità), alle opportunità e alle criticità di tali strumenti.

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Mini-talks: RAGIONAMENTO / 421

Disentangling Cognitive Flexibility and its Role on Higher-Level Executive Functions in Physiologic Aging

Authors: Ilaria Corbo[1]; Giuseppe Forte[1]; Maria Casagrande[1]

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Over the past decades, the construct of cognitive flexibility (CF) has been defined in different ways. The multiplicity of definitions not only reflects its inherent complexity, but also presents a challenge in experimental assessment. The definition of CF is contingent upon the approach taken to its investigation and this renders difficult to establish a universally accepted definition. Some definitions of CF refer to it as a single construct, while others analyze it through its components. Conversely, some authors analyze CF in relation to other executive functions (EFs). Cognitive Flexibility, like other EFs (i.e., planning and fluid intelligence), remains stable throughout adulthood and begins to gradually decline with age.
The aims of this study is to examine the relationship between cognitive flexibility and higher-level EFs (planning and fluid intelligence) in physiological aging, with the following goals: (i) defining the components of CF; (ii) evaluating the role of global functioning in mediating the relationship between CF components and higher-level EFs; (iii) assessing whether these components predict higher-level EFs; and (iv) evaluating whether these components are able to predict higher-level EFs in adults and older individuals. A sample of 130 participants was selected. A series of analyses were conducted to test the study hypotheses. The results indicate that CF is not a unitary construct, but rather comprises two factors: Task-Switching and Set-Shifting. Furthermore, the components of CF are capable of predicting higher-level EFs, although this relationship differs in adults and older adults.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks: ACTION & MOTION (2) / 436

Sport and resilience: preliminary study on volleyball players

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Resilience is an adaptation process to maintain or restore well-being following an adverse event. In sports psychology, this term indicates the capability of athletes to counteract situations of adversity as challenges for improvement rather than as insurmountable obstacles (Fletcher and Sarkar, 2012). Therefore, resilience becomes an indispensable prerequisite for achieving sporting success (Weissensteiner et al., 2009). Few studies have investigated the psychological and environmental factors related to athletes39; ability to resist under high-pressure situations.
In our study, we administered the Italian version of the 14-item Resilience Scale and the Toronto Alexithymia Scale (TAS-20) to 12 female volleyball athletes (mean age = 26 years, SD = 2.25). We also administered these scales to a control group of 12 women leading a sedentary lifestyle (mean age = 24 years, SD = 3.42). This design allowed us to compare the resilience and emotional recognition of athletes and non-athletes.
The findings of our study are novel and significant. We observed that athletes scored significantly higher on resilience (81 vs 64), indicating that sports can enhance the ability to withstand adversity. Additionally, while there were no differences in the total scores of the Toronto Alexithymia Scale (TAS-20) between the two groups, athletes scored significantly lower on the Difficulty Identifying Feeling TAS-20 subscale. This suggests that sports enhance emotional recognition, a skill that could be beneficial in anticipating the actions of opponents.
Although preliminary, the present study suggests the importance of psychological aspects of performance and encourages investigating athletes39; behavioural characteristics to reach sporting success.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

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Mini-talks ATTENTION (5) / 323

Behavioral and EEG correlates of implicit attention to positive and negative social words in a socio-emotional Stroop task

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Studies based on the "emotional"variants of the Stroop task (eStroop) have shown that stimulus valence shapes response latency to salient stimuli. This modulation likely reflects the different implicit attentional capture by negatively vs. positively valenced words, with these stimulus categories being typically associated with longer and shorter response times (RTs), respectively, compared to neutral words. However, the existing evidence on the eStroop might be confounded by other semantic features of emotional words, and particularly their "social" content. It is therefore necessary to disentangle the effects of individual vs. social stimuli on implicit word processing when assessing the effect of different emotional stimuli on the eStroop task. On this basis, this study aims to examine the time course of these effects, and to investigate possible behavioral and neural differences that might correlate with more direct measures of attentional processing.

Thirty-four healthy participants underwent electrophysiological (EEG) recording while performing a socio-emotional Stroop including words of Italian language characterized by high arousal levels and differing in terms of semantic content (social/individual) and valence (positive/negative). Preliminary behavioral analyses confirm a facilitatory effect of processing positive, compared with negative, individual emotional words, and an opposite pattern when processing social emotional ones. Early and late ERP component analyses highlighted significant differences in the neural processing of individual emotional and social features compared to neutral stimuli, contributing to the observed behavioral patterns. These results provide insights into the neural circuits underlying the distinctive implicit attentional capture by social emotional, compared with individual emotional, target words.

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Mini-talks: RAGIONAMENTO / 422

Explicit and implicit representation of reward value in cocaine use disorder (CUD): a mouse kinematic study on intertemporal decision-making

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Co-authors: Cinzia Calluso [2]; Annalisa Tosoni [1]; Francesco Di Carlo [1]; Lorenza Lucidi [3]; Lorenzo Pio Padula [1]; Ilenia Rosa [1]; Mauro Pettorruso [1]; Giovanni Martinotti [1]; Giorgia Committeri [1]

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Background: Cocaine Use Disorder (CUD) is a chronic condition with implications on cognitive functions such as decision-making and impulse control. Intertemporal choice paradigms, measuring temporal discounting, offer insight into decision-making of addictive behaviors; mouse kinematics, a process-tracing method, provide a deeper understanding of decision dynamics. Here, mouse kinematics was implemented with the aim to investigate the intertemporal decision-making in CUD patients compared to healthy controls (HC), and to explore the relation between decision-making biases and clinical measures.
Methods: mouse kinematics recorded during an intertemporal choice task was administered in 36 CUD patients and 34 healthy matched controls. Participants also underwent a complete psychiatric and neuropsychological evaluation.
Results: In line with previous literature, results revealed higher discount rates in the CUD group. Mouse kinematics was able to discriminate among groups, with CUD patients display straighter trajectories for immediate choices and edge-curved ones for future ones. Further, a series of associations have been found between discount rates, kinematic measures and clinical indices.
Conclusion: Overall, these results hold important implications and relevant insights for tailored therapeutic interventions, relapses prediction, and neurobiological classification of addictive disorders.

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Mini-talks: METHODOLOGY (2) / 290

Measuring maladaptive cognitions related to video-gaming: Development of a shortened version of the Internet Gaming Cognition Scale by applying Item Response Theory

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Co-authors: Emilia Serra [2]; Marta Vecchiato [2]; Valentina Veronese [2]; Caterina Primi [3]; Maria Anna Donati [3]

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Problematic behavioral patterns with video games can arise or be maintained by maladaptive game-related cognitions, even in adolescents. Thus, for preventive and clinical purposes, it is important to have instruments specifically able to relieve high levels of maladaptive cognitions. The Internet Gaming Cognition Scale (IGCS) is a new and promising scale to assess problematic gaming cognitions through items with a three-ordered response scale. However, relatively few attention has been focused on its psychometric properties, and only by applying Classical Theory of Test. The aim of the present study was to investigate the psychometric properties of the IGCS using item response theory analyses in order i) to test if items really assess medium and high levels of the latent trait and ii) to maximize the scale efficiency by maintaining items that show the best functioning in measuring it. Participants were 741 adolescent video-gamers (58% males, Mage=16.38, SD = 1.53). The Graded Response Model resulted to fit data, but some items did not fit or showed problems of local dependence. By deleting those items, a shorter version of the IGCS was obtained. Total Information Function (TIF) showed that the scale was very informative from medium to high levels of the trait. Invariance across gamers with different levels of severity was tested with Differential Item Functioning (DIF), and correlations with time spent gaming and risky lootbox use were provided. The shortened version of IGCS obtained through IRT seems to be a useful tool for preventive and clinical purposes with adolescents.

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Mini-talks: EMOTIONS (2) / 445

Immaginazione mentale, eccitabilità corticale e lattacidemia. Studio pilota su atleti di Taekwondo.

Authors: Valerio Bonanno[1]; Giovanna Alagona[2]; Andrea Buscemi[3]; Roberta Monaca[3]; Marinella Coco[1]

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Negli ambiti degli studi sull'Imagery, Immaginazione Motoria, o Motor Imager si intende comunemente il processo di esecuzione mentale che porta allo svolgimento di una certa azione, che però poi non viene fisicamente realizzata da parte di chi la produce. 24 atleti professionisti di Taekwondo

hanno preso parte alla ricerca che prevedeva una prima fase di addestramento al protocollo di allenamento Tabata, successivamente i partecipanti sono stati convocati in laboratorio in cui da seduti venivano esposti alla visione del protocollo Tabata eseguito dal loro allenatore, successivamente veniva chiesto loro di immaginare ad occhi chiusi il protocollo Tabata. Sono stati rilevati: eccitabilità della corteccia motrice e livelli di lattato ematico. I risultati ottenuti mostrano un cambiamento della soglia di eccitabilità della corteccia motrice sia dopo la visione che dopo l'immaginazione del protocollo Tabata. I valori passano da valori iniziali del 53,33%, al 48,5% dopo la visione del protocollo Tabata, al 50% dopo l'immaginazione del protocollo Tabata, a 53,5 % 15 minuti dopo la fine dell'intero protocollo. Anche i valori del lattato ematico, si modificano passando da un valore basale di2,08 mmol/l, a 3,87 mmol/l dopo la visione del protocollo Tabata, a 2,90 mmol/l dopo 4'di immaginazione protocollo Tabata, 2,07 mmol/l 15 minuti dopo la fine dell'intero protocollo. La facilitazione che si ottiene osservando ed immaginando un gesto, un protocollo di movimento ci permette di ipotizzare come tali tecniche possano avere un forte potenziale, sia in ambito sportivo che riabilitativo.

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Mini-talks ATTENTION (5) / 409

L'ipercontrollo genitoriale come specifica forma di maltrattamento: uno studio EEG di connettività funzionale

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Recenti studi suggeriscono di considerare l'ipercontrollo genitoriale come una forma di maltrattamento infantile. L'esperienza di maltrattamento infantile è stata associata ad alterazioni della connettività nel Salience Network (SN), un insieme di aree cerebrali cruciali per l'individuazione, l'elaborazione e l'integrazione delle informazioni ritenute rilevanti. In questo studio indaghiamo la relazione tra l'ipercontrollo genitoriale (materno e paterno) e la connettività funzionale nel SN cercando conferme sulla specificità dell'ipercontrollo come forma di maltrattamento.
La procedura sperimentale ha coinvolto 56 partecipanti in due fasi: 1) compilazione online di questionari relativi a criteri di inclusione, misure cliniche (Measure of Parental Style, MOPS, Childhood Trauma Questionnaire, CTQ, e Brief Symptom Inventory, BSI) e variabili sociodemografiche (età, sesso, istruzione, consumo di alcool e tabacco), 2) registrazione EEG in condizione di resting-state.
È stata riscontrata una correlazione significativa positiva tra la sottoscala del MOPS relativa all'ipercontrollo materno e un aumento dell'attività nella banda di frequenza theta tra il giro frontale medio destro e l'insula sinistra. La correlazione parziale rimane significativa controllando per le variabili sociodemografiche, la psicopatologia generale (BSI) e tutte le sottoscale del CTQ. Nessuna correlazione significativa è stata riscontrata tra l'ipercontrollo paterno e la connettività nel SN.
L'associazione tra l'ipercontrollo materno e l'incremento dell'attività theta nel SN potrebbe riflettere un automatico orientamento dell'attenzione verso stimoli esterni percepiti come potenzialmente minacciosi anche in stato di riposo. Questo risultato fornisce un contributo all'ipotesi che l'ipercontrollo possa configurarsi come una specifica forma di maltrattamento che favorisce la percezione del mondo come un luogo pericoloso e dal quale proteggersi.

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Lunch & Poster 3 / 73

"Thinking outside the box": Exploring the effect of Local-Global Processing Styles in Creative Generation and Evaluation.

Authors: Clara Esposito[1]; Massimiliano Palmiero[None]; Luca Simione[1]; Antonella Cavallaro[1]; Emilio Saviano[2]

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Creativity is defined as a process that involves both generation and evaluation of ideas.Cognitive style refers to how people acquire, organize, and use information and is related to creativity.Amongst all cognitive styles, the explanatory power of the field-dependent (global) or independent (local) cognitive style has been widely recognized. Unlike field-dependent subjects, field-independent individuals usually show less difficulty in separating information from the surrounding context, and are generally more focused on relevant information, inhibiting attention to the environment. Through two different tasks, we explore how individuals' cognitive style influence their approach to generating and assessing creative ideas. This study employs a multifaceted approach to assess creativity and cognitive styles, specifically through the Navon Task.In this task, participants are presented with large letters comprised of smaller letters, and are asked to identify either the large letter (global task) or the smaller letters (local task).Moreover, participants complete the Creativity Evaluation Task to evaluate the capacity for discernment between common, inappropriate, and genuinely creative ideas and the Alternative Uses Task to assess creative production by prompting participants to generate alternative uses for a common object.While in the CET participants should judge already produced ideas about alternative uses of common objects for their novelty and appropriateness, in the AUT they produce ideas which are then evaluated for originality, flexibility, and elaboration.All tasks were digitized and administered using the PsyToolkit platform, ensuring standardized administration. Currently, the study is actively engaged in the data collection phase, wherein participants are undergoing cognitive assessments and completing the designated tasks.

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Lunch & Poster 3 / 336

Correlations between gustatory, olfactory, cognitive function, and age in healthy women

Authors: Fabrizio Sanna[1]; Carla Masala[1]

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Aging is a progressive physiological degeneration associated to a decline in chemosensory processes, cognitive abilities, and reduction in synaptic plasticity. Biological bases of ageing are still not completely understood, and many theories have been proposed. This study aimed to evaluate the occurrence of age-related changes affecting the chemosensory function (gustatory and olfactory) and general cognitive abilities and their potential associations in women. To this aim, 319 women (age range from 18 to 92 years) were recruited and divided into four different age groups: 18-34 years, 35-49 years, 50-64 years, and ≥65 years. Our results confirm that in women gustatory, olfactory, and cognitive functions decline, though in different manner during aging. Olfactory and cognitive function showed a slight decline along the first three age-classes with a dramatic decrease after age 65 years, while gustatory function decreased more gradually. Olfactory and gustatory deficits may have a high degree of predictivity for general cognitive function as well as for specific cognitive subdomains such as visuospatial/executive abilities, language, memory, and attention. Our study highlights the importance of using chemosensory assessments for the early diagnosis of cognitive decline and for the development of appropriate personalized risk prevention strategies.

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Lunch & Poster 3 / 408

The unconscious effect of emotional information on spatial working memory performance

Authors: Beatrice Cianfanelli[1]; Marco Costanzi[1]

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Remembering where negative events occur has undeniable value, but how emotional memories are encoded remains elusive. It is widely recognized that information in working memory (WM) is consciously processed. During the encoding, emotion-related information attracts attention more quickly or occupies more attention resources and has an emotional bias effect. However, evidence that WM can operates on unconsciously represented information is accumulating.
Here, we investigate whether the subliminal presentation of emotional pictures can affect spatial WM performance.
Participants (N=37) were presented with an emotional object-relocation task with different load conditions. An array of 2, 4, 6 or 8 rectangles appeared (1s) on the screen of a computer. After that, pictures selected from IAPS subliminally appeared (16.67 ms) superimposed on each rectangle. For each load condition, half of pictures were negatively-valenced (Mvalence = 2.64, Marousal = 6.55) and the other half were neutral (Mvalence = 5.02, Marousal = 2.51). Participants were then asked to relocate the rectangles in the original position as accurately as possible.
Statistical analysis (two-way ANOVA with valence and load as factors) showed significant effects for load ($F(3,108) = 16.93$; $P<0.0001$) and for the interaction ($F(3,108) = 3.13$; $P=0.03$) . Post hoc analyses revealed that subliminal presentation of negative pictures increased spatial WM performance only in the load condition with 8 rectangles (#, $P=0.04$), suggesting that emotional stimuli affect spatial WM performance unconsciously when cognitive load exceeds memory capacity.

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Lunch & Poster 3 / 328

'Despite the noise, I can see what you mean': audiovisual speech in different noisy situations

Author: Simone Gastaldon[1]

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Everyday listening conditions are very often far from the quiet settings provided in the laboratory when studying spoken language processing. Daily communication via speech often happens through noisy channels, e.g., phone call with a bad line or face-to-face in a crowd. In such noisy contexts, mouth movements and face cues facilitates comprehension, likely by exploiting predictive processing as well (Peelle & Sommers, 2015). Interestingly, speech-motor neural substrates seem to be particularly engaged when processing speech in noise (Skipper et al., 2017).

Here we delineate a research project that aims at studying how the brain adapts to different noise sources –e.g., vocoding is not a real life-like noise source, while superimposed multi-talker babble is –and what is the role of audio-visual and audio-motor abilities. While their EEG is recorded, participants will attend to audio-video stimuli of a person uttering sentences, which can be semantically constraining towards a final target word or not. Noise type will be manipulated. To understand prediction and integration processes in familiar and unfamiliar noisy contexts we plan to analyze: 1) oscillatory power in the alpha, beta, and gamma ranges, before and after the target word, 2) connectivity between auditory, motor and visual regions, 3) phase coherence between EEG and audio envelope and mouth movements. We plan to also collect behavioral measures related to individual abilities in lip-reading, audiovisual integration, and audio-motor synchronization.

The research aims at understanding how audio-visual and audio-motor individual abilities contribute to predicting and comprehending speech in familiar and unfamiliar noise.

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No

Lunch & Poster 3 / 438

Is the dorsal stream engaged in object shape recognition? A cc-PAS Registered Report study

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One of the most influential models of visual information processing describes the dorsal visual pathway as not involved in object perception. However, growing evidence highlights the engagement of the dorsal stream in processing some object proprieties, such as global shape. Therefore, there is a lively debate concerning the role of the dorsal stream in this context.
Our work aims to disentangle the contribution of the dorsal stream to object shape recognition by strengthening V1-to-SPL dorsal stream connectivity through an individualized tractography-based cortico-cortical paired associative stimulation (ccPAS) protocol. Moreover, we will investigate whether the behavioral performance in object shape recognition is associated with the anatomo-structural (DTI) and effective (TMS-EEG) connectivity of the dorsal pathway.
Dorsal stream connectivity will be modulated using a ccPAS protocol targeting the endpoint of the dorsal stream, with an inter-stimulus interval (ISI) of 9ms. The effect will be assessed by baseline corrected Inverse Efficiency Scores (IES) values of a two-alternative forced choice match-to-sample visual discrimination task (2AFC MTS), that discriminates global spatial arrangements and local features of objects. Then, we will test if structural and effective connectivity measures of the dorsal pathway can predict the behavioral performance.
This study has been submitted as a Registered Report. Given these premises, if the dorsal pathway is involved in shape perception, we expect to observe a significant improvement in performance only in trials testing global shape processing after the ccPAS protocol. Also, we expect to find that structural and functional connectivity of the dorsal stream predict the behavioral performance.

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Lunch & Poster 3 / 398

Unveiling synaptic and transcriptomic signatures of approach behavior in medial prefrontal cortex pyramidal neurons: the involvement of excitatory neurotransmission and immune system

Author: Anna Panuccio[1]

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Approaching (AP) and avoiding (AV) tendencies are basic behavioral aptitudes in responding to rewarding and aversive stimuli, and their balancing (BA) is critical for successful adaptation to the environment. The AP tendency, associated with novelty seeking, plays an important evolutionary role in identifying new sources of reward but also heightens the risk of externalizing behaviors like attention deficit/hyperactivity disorder, and addiction. Despite the medial prefrontal cortex (mPFC) being a crucial hub for sustaining attention towards relevant and novel stimuli in AP behavior, its specific synaptic and transcriptomic signatures have not yet been identified. In the present research, we employed an experimental model of individual differences to select a subpopulation of mice that spontaneously responded with AP or BA behaviors toward conflicting emotional stimuli, and expressed yellow fluorescent protein (YFP) in pyramidal neurons of the mPFC. Electrophysiological recordings revealed that AP mice exhibited a significantly higher frequency of spontaneous excitatory post-synaptic currents in mPFC pyramidal neurons compared to BA mice. We isolated YFP-expressing pyramidal neurons from AP and BA mice for cell-specific RNA analysis. The transcriptomic results highlighted differential gene expression between AP and BA mice, particularly in immune system regulation pathways. Notably, AP mice exhibited overexpression of genes related to immune responses, along with changes in cell number and activation of specific peripheral and central immune cells such as CD3+ T lymphocytes and microglia. Overall, our findings suggest that in the mPFC both the increased excitatory neurotransmission and the altered immune response are crucial underpinnings of the AP tendency.

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Un approccio neurofisiologico al riconoscimento emotivo di volti e corpo: uno studio di stimolazione transauricolare del nervo vago (taVNS)

Author: Erik Leemhuis[1]

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Il corretto riconoscimento delle espressioni emotive è fondamentale per l'interpretazione del comportamento umano e la conseguente pianificazione e produzione di risposte nei processi di interazione sociale. Le informazioni provenienti dall'ambiente, di natura visiva ed uditiva, insieme alle specifiche caratteristiche dell'individuo, sono alla base dell'interpretazione dello stimolo. Un ruolo fondamentale è giocato anche dallo stato fisiologico, particolarmente per la regolazione dell'equilibrio omeostatico tra sistemi simpatico e parasimpatico.
Lo scopo di questo studio esplorativo è quello di indagare gli effetti della modulazione vagale, tramite taVNS, sull'abilità di riconoscimento di stimoli uditivi a connotazione emotiva (rabbia, sorpresa e

paura) o neutra, che devono essere associati alla corrispettiva espressione corporea o facciale. Vengono inoltre indagate le possibili correlazioni tra l'abilità di riconoscere le emozioni, l'attività cardiaca (heart rate variability), e le caratteristiche ed esperienze individuali valutate attraverso questionari self-report. A tal fine, lo studio ha coinvolto un campione di giovani adulti. Ogni partecipante è stato sottoposto a due sessioni sperimentali randomizzate, una di stimolazione (taVNS attiva) e una di controllo (taVNS sham) in due giorni differenti allo stesso orario.
Risultati preliminari suggeriscono un possibile effetto di miglioramento, durante la condizione di stimolazione, nel compito di riconoscimento emotivo con le immagini corporee, sebbene la prestazione globale ai compiti non sembrerebbe subire cambiamenti significativi. Tale miglioramento potrebbe essere attribuibile ad un riconoscimento migliore degli stimoli neutri sostenendo la necessità di ulteriori approfondimenti nella relazione tra attività del sistema vagale e riconoscimento di stimoli emotivi.

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Lunch & Poster 3 / 410

Perceived body image in long-term mindfulness practitioners

Authors: Erik Leemhuis[1]; riccardo de pastina[2]

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The body image is the conscious visual representation of body parts' size and shape, and it reflects how one's own body is perceived. A distorted body image characterizes various psychiatric disorders, such as anorexia nervosa; however, even healthy individuals show distortions, for instance in estimating the length of their limbs. As body image, interoception, i.e., signals originating from within the body, contributes to experiencing one's own body. Findings from clinical and non-clinical populations suggest that subjects with higher interoception might represent their body more accurately. Practices which promote mind-body integration, such as the mindfulness meditation, are thought to favor interoceptive awareness. It is significant that mindfulness meditation promotes anatomo-functional changes of the insula, which is a relevant area for the interoceptive processing and the bodily representation. Many studies have been conducted on the relationship between mindfulness meditation and interoception. However, no study has investigated whether mindfulness meditation affects the body image, although gaining a deeper knowledge on this topic might be beneficial to understand the efficacy of mindfulness in managing conditions that involve body image distortions, such as eating disorders, and body dysmorphic disorder. In light of the available evidence, the research hypothesis posits that the body image of long-term practitioners of mindfulness is more accurate. In this study we show preliminary data on the body image of mindfulness practitioners and non-meditators, as measured with the body image task (BIT). Also, the link between practicing mindfulness meditation, interoception and body image is discussed.

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Lunch & Poster 3 / 443

SMARTPHONE OVERUSE, DISTRAZIONE DA SMARTPHONE, MOTIVAZIONE, AUTOREGOLAZIONE, PROCRASTINAZIONE E DROPOUT: QUALE RELAZIONE? UNA RICERCA EMPIRICA

Authors: Maria Lidia Mascia[1]; Rachele Conti[2]; Maria Pietronilla Penna[2]

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Comprendere quali fattori possano essere predittori di drop-out è un tema sul quale la letteratura si interroga da decenni. Agire preventivamente sui fattori di successo o di insuccesso accademico porta con sé la possibilità di poter attuare interventi efficaci a supporto dello studente.
Negli ultimi anni, un fattore che è subentrato nelle vite di tutti è l'utilizzo massivo dello smartphone. Partendo da questa evidenza ci si chiede dunque quanto anche l'overuse da smartphone e la distrazione da smartphone possano rappresentare predittori del rallentamento degli studi o addirittura di intenzione di drop-out. La letteratura sottolinea correlazioni positive tra smartphone overuse, distrazione, procrastinazione e intenzione di drop-out. I dati risultanti dalla nostra ricerca, effettuata su un campione di 360 studenti e studentesse universitari confermano quanto messo in evidenza dalla letteratura. Il campione di universitari ha compilato un questionario online composto dalla scala della smartphone overuse, distrazione da smartphone, procrastinazione, motivazione, autoregolazione nell'apprendimento e intenzione di drop-out. I risultati confermano che la procrastinazione correla positivamente con la smartphone overuse, con la distrazione da smartphone e con la volontà di abbandonare l'università. La motivazione intrinseca e l'autoregolazione correlano negativamente con la procrastinazione. Allo stesso modo, la distrazione e l'uso eccessivo dello smartphone correlano negativamente con l'autoregolazione. Le analisi effettuate confermano la mediazione dell'overuse da smartphone e della distrazione da smartphone nella relazione tra procrastinazione, motivazione, autoregolazione e intenzione di drop-out.

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No

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Identificazione delle barriere all'aderenza farmacologica per la creazione di strumenti tecnologici personalizzati

Authors: Martina Vigore'[1]; Grzegorz Bilo[2]; Alessandra Gorini[3]

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L'OMS identifica la scarsa aderenza alla terapia come una delle principali cause di aumento delle ospedalizzazioni e della mortalità nei pazienti cronici, inclusi coloro che soffrono di ipertensione arteriosa. Dal 43% al 65.5% dei pazienti che non aderiscono alle terapie prescritte sono ipertesi. Per

queste ragioni l'obiettivo dello studio è di identificare le possibili barriere all'aderenza percepite da pazienti ipertesi e da medici che si occupano di ipertensione.
Due psicologhe hanno condotto 3 focus groups, di cui uno formato da 6 medici e 2 di pazienti, provenienti da contesti socioculturali differenti, formati entrambi da 10 persone, in cui sono state indagate le barriere all'aderenza agli antipertensivi. Il tema "aderenza"è stato suddiviso in tre macrocategorie: fattori legati alla persona, fattori legati al farmaco, fattori legati all'interazione medico-paziente. I focus group sono stati videoregistrati e trascritti manualmente.
Nei tre focus group, non sono state osservate sostanziali differenze tra i fattori che influenzano l' aderenza se non in termini di importanza delle barriere. I fattori che vengono riportati come maggiormente coinvolti nell'aderenza sono il tono dell'umore, problematiche legate alle funzioni cognitive, l'organizzazione della quotidianità, la relazione medico paziente, il supporto socio-familiare, le credenze sui farmaci, la polifarmacoterapia e la comprensione delle indicazioni terapeutiche.
I risultati mostrano concordanza tra medici e pazienti, e tra pazienti provenienti da contesti diversi, rispetto ai fattori che limitano l'aderenza, mostrando la solidità di tali fattori nel vissuto degli uni e degli altri. Tali dati verranno utilizzati per creare supporti tecnologici personalizzati per aumentare l'aderenza terapeutica nei pazienti ipertesi.

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The 'Digital Interventions for Psychological and Psychiatric Services'(DIPPS) Project: An Early Warning Prediction System Relying on Bayesian Networks

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The DIPPS project endeavors to construct a digital platform aimed at supporting psychological and psychiatric interventions to improve mental health. The DIPPS platform encompasses various functionalities, from the digitalized assessment data to a predictive system for potential symptom exacerbation.
Utilizing the digitalized assessment data, Bayesian network (BNs) can be informed to forecast the pathways and probabilities leading to worsening of specific psychopathology indicators. BNs represent a novel method to modeling causal relations, especially with cross-sectional data, where partial correlation networks are challenged. Employing a directed acyclic graph (DAG), BNs depict causality and conditional probabilities.
In a sample of 1017 participants, the hill climbing (HC) algorithm was used with the R-package "bnlearn". Initially, the HC algorithm starts with a saturated network and progressively introduces tests that augment the number of conditioning nodes. To ensure a robust BN, a bootstrap was employed with 1000 iterations. The final averaged network incorporated edges that recurred in at least 85% of the bootstrap iterations and maintained consistent directions in over 50% of these iterations.
Findings indicated that intolerance of uncertainty is a 'parent node', influencing anxious, somatic and PTSD symptoms, while feelings of loneliness are a 'child node,' influenced by most other nodes.
Bayesian networks facilitate researchers in identifying plausible causal connections within psychometric data, providing fresh insights into the psychological phenomena under examination. They are instrumental in formulating novel hypotheses and substantiating existing ones with relevant evidence. Insights gained from BNs could inform more effective interventions or personalized treatment strategies for mental health conditions.

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Emotional Temporal Distortions: Exploring Pupil Dilation as a Gateway to Temporal Processing

Authors: Luigi Micillo[1]; Mariagrazia Capizzi[2]; Giovanna Mioni[3]

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The subjective perception of time is known to be influenced by our emotional states, yet the precise mechanisms governing this relationship remain elusive. This exploratory study aims to shed light on the intricate relationship between emotionally induced physiological arousal and our temporal perception, focusing specifically on pupil dilation as a physiological indicator.

Through a randomized experimental design targeting participants aged 18 to 25, we aimed to investigate whether variations in arousal levels in response to negative stimuli correlated with observable changes in pupil dilation. Additionally, we aimed at determining whether these fluctuations can serve as reliable predictors of the extent of temporal distortion experienced during emotionally charged events.

Participants were presented with stimuli from the International Affective Picture System and performed a time reproduction task while their pupil dilation was tracked using an EyeLink 1000 plus system. The data were analyzed using generalized linear mixed models, aiming to uncover whether exposure to negative stimuli correlated with increased pupil dilation and influenced temporal perception.

The results showed that a higher degree of constriction was associated with the negativity level of the images, whereby more negative stimuli resulted in greater constriction. Additionally, concerning time perception, we observed a greater overestimation of temporal duration for stimuli categorized as negative-high compared to neutral ones, and an underestimation for stimuli categorized as negative-low compared to neutral ones.

This study sought to deepen our understanding of how emotions, physiological responses, and our subjective perception of time intertwine.

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Exploring similarities and differences between gaze and arrow targets in spatial interference tasks: A Drift Diffusion Modeling approach.

Authors: Renato Ponce[1]; Maria Casagrande[2]; Andrea Marotta[3]; Juan Lupiáñez[3]; Carlos González-García[3]

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In social attention research, the spatial interference paradigm reveals distinct congruency effects with gaze and arrow targets. Arrows typically induces a standard congruency effect (SCE), where responses are faster when the target's direction aligns with its location. Conversely, gaze targets yield a reversed congruency effect (RCE), with slower responses under these conditions. It is hypothesized that gaze cues, while triggering an SCE similar to arrows, introduce an additional social component that contributes to the RCE. To better understand these dynamics, we applied the Drift Diffusion Model (DDM) to analyse four published datasets: Marotta et al. (2018; 2019) using a between-block design and Hemmerich et al. (2022) using a within-block design. We estimated three DDM parameter, drift rate, threshold boundary, and non-decision time, allowing them to vary across target types and congruency levels. We then built a linear mixed model from all the studies to compare these parameters. Our results revealed a significant interaction between target type and congruency for all parameters. Specifically, arrow targets consistently displayed differential patterns between congruent and incongruent conditions across the DDM parameters, aligning with the SCE. However, gaze targets showed no significant differences in drift rate but did exhibit a numerical reversion. Additionally, non-decision time was the only parameter demonstrating a main effect of block design. These findings suggest that gaze processing might involves additional information handling compared to arrows, potentially contributing to the observed RCE in reaction times. Further in-depth exploration of these effects is necessary.

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Assessing User Experience in older adults: a valid and tailored evaluation tool

Author: Francesca Bruni[1]

Co-authors: Valentina Mancuso [2]; Elisa Pedroli

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As novel techniques for engaging with systems emerge within virtual reality, it becomes crucial to evaluate their impact on user experience. Several tools are available for assessing user experience, computer interfaces, or displayed content (e.g. Brooke 1996, Lewis 1995, and Sauro and Dumas 2009), as well as the sense of presence within an environment (e.g., Lessiter et al 2001). However,

few measures are tailored to assess the interactions prevalent in 360° environments and among older users. Many of these lack the adaptability required to evaluate evolving interaction paradigms in VR environments, especially those designed for hardware input devices or use cases. Moreover, these measures often are not in line with the advancements in technology and shifts in user demographics. We aim to create a psychometrically valid questionnaire that can be tailored to different input devices, aiding in the evaluation of virtual reality experience quality in older adults. Through a literature review, we identified key variables for fostering positive user experiences. Subsequently, we devised a customizable questionnaire capable of accommodating the needs of older adults and new interaction modalities, addressing the challenges. This questionnaire will undergo psychometric analyses to validate its reliability and sensitivity in VR environments, enabling researchers to employ a validated instrument when evaluating novel interaction forms in virtual reality.
We will delineate the development process of this questionnaire designed to assess subjective user experiences. The final questionnaire will be presented at the conference, providing researchers with a valuable tool for assessing the aspects of user experience in VR.

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Il ruolo delle aree linguistiche nel Right Ear Advantage percettivo e immaginativo: uno studio rTMS

Authors: Benedetta Rollo[None]; Paolo Capotosto[1]; Rocco Palumbo[2]; Alberto Di Domenico[2]; Nicola Mammarella[2]; Luca Tommasi[3]; Giulia Prete[3]

[1] *Università di Chieti*

[2] *Department of Psychological, Health and Territorial Sciences, University "G. d'Annunzio" of Chieti-Pescara*

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Il vantaggio dell'orecchio destro (Right Ear Advantage: REA) si manifesta quando - in presenza di due diversi stimoli presentati in ascolto dicotico - viene chiesto di riferire quale stimolo è stato sentito meglio. Questo effetto è classicamente spiegato dalla specializzazione emisferica sinistra per il linguaggio, è confermato anche in compiti di pura immaginazione uditiva, ma risulta assente o addirittura invertito nei pazienti con allucinazioni uditive. Tale assenza di REA sarebbe spiegata da un'alterata attivazione inter-emisferica delle aree linguistiche dei pazienti.
A 18 partecipanti sani è stato presentato rumore bianco ad entrambe le orecchie, insieme ad una voce presentata ad un solo orecchio, a volume più alto, allo stesso volume o a volume più basso rispetto al rumore bianco. In un ulteriore numero di prove la voce non era presente. Tuttavia, in tutte le prove ai partecipanti veniva chiesto di riferire se la voce era stata presentata all'orecchio sinistro o destro. Ciascun partecipante ha svolto due sessioni, precedute da stimolazione magnetica transcranica ripetitiva (rTMS) sulle aree temporali sinistra e destra (TP3/TP4; 1 Hz). I risultati hanno confermato il REA sia quando la voce era chiaramente udibile (REA percettivo), sia quando non era chiaramente udibile o era addirittura assente (REA immaginativo). Inoltre, è emersa una interazione tra lato della stimolazione e grado di propensione dei partecipanti ad esperienze inusuali ed allucinatorie, misurate con una scala standardizzata (O-LIFE). I risultati mostrano che la propensione alle allucinazioni uditive può costituire un fattore potenzialmente importante nel modulare il Right Ear Advantage.

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The Uncanny Valley in Psychopathic and Schizotypal Personality Traits as a Tool to Understand Human-Robot Interaction and Social Cognition

Author: Clara Gangemi[1]

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Corresponding Author: clara.gangemi@imtlucca.it

Creating humanoid robots is an engineering longstanding goal. Yet a significant psychological obstacle stands in the way: the Uncanny Valley (UV). This phenomenon describes the abrupt shift in people's affective reactions towards robots, from affinity to discomfort, when the robot closely resembles a human, but fails to achieve true human-like appearance. Some scholars propose that this discomfort stems from attributing human-like mental abilities to non-human entities, regardless of their appearance. To date, empirical data have not yet conclusively determined whether human-like *bodily appearance* or *mental abilities* primarily elicit the uncanny feeling.

The present study aims to compare feelings of uncanniness evoked by androids with various degrees of human-like appearance and mental abilities in a large sample of individuals, with low to high psychopathic or schizotypal personality traits. Since high levels of these traits are associated with altered socio-cognitive abilities, if UV stems from a fallacious attribution of mental abilities, we expect our sample to exhibit differential UV effects, depending on the android's mental abilities and regardless of its bodily appearance.

The study will be implemented online and articulated in three phases: 1. Trait assessment: psychopathic and schizotypal traits, socio-cognitive abilities, general attitudes toward robots; 2. Stimulus presentation: photos of a human, an android, and a robot, accompanied by verbal descriptions of (high or low) mental abilities; 3. Rating phase: stimuli uncanniness.

Studying affective reactions in socio-cognitive atypical conditions could unlock insights for building more likeable social robots, as well as for shedding light on the complex nature of socio-cognitive dysfunctions.

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Oltre il Tempo: validazione di uno strumento di misurazione della Prospettiva Temporale attraverso il framework dell'autoregolazione

Authors: Alex Marson[1]; Andrea Spoto[1]; Giovanna Mioni[1]; Giorgia Cona[1]

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Secondo la teoria della Prospettiva Temporale di Zimbardo e Boyd, cinque dimensioni latenti esprimono il rapporto fra time frame mentali e comportamenti, emozioni e cognizione. Recenti progressi teorici hanno però proposto ulteriori dimensioni; nonostante tali proposte impieghino soprattutto costrutti legati all'autoregolazione, come ansia per il futuro e mindfulness, manca però un un quadro teorico di riferimento più ampio ed esaustivo. In questo contributo, gli autori introducono un modello e uno strumento di misurazione per la Prospettiva Temporale, integrando le proposte precedenti nel quadro teorico dell'autoregolazione. La Prospettiva Temporale deriverebbe infatti dall'interazione tra time frame, atteggiamento positivo o negativo, e propensione all'autocontrollo.
Un panel di 10 esperti ha valutato un pool di 79 item provenienti da vari questionari misuranti Prospettiva Temporale e costrutti affini, valutando se ciascun item misurasse sfaccettature distinte dell'autoregolazione. Successivamente, attraverso un'analisi bayesiana formale della validità di contenuto, 49 item sono stati selezionati garantendo una rappresentazione equa di diversi aspetti di autoregolazione e valenza. Il questionario è stato poi somministrato a un campione di 500 partecipanti italiani.
Sono state testate varie soluzioni fattoriali, incorporando sia ipotesi a priori che i risultati di analisi fattoriali esplorative split-half. Il modello che ha dimostrato il miglior adattamento è stato utilizzato come base per il questionario, di cui sono state testate affidabilità test-retest e validità convergente/divergente. Lo sviluppo di questo strumento rappresenta un significativo aggiornamento nella misurazione della Time Perspective, alla luce dei recenti contributi teorici ed empirici sull'autoregolazione e le sue declinazioni, e con particolare attenzione alla validità del contenuto.

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The Role of the Submental Muscle in Consumer Preferences: Electrophysiological Analysis in a Virtual Supermarket

Authors: Carmelo Mario Vicario[None]; Chiara Lucifora[1]; Francesca Ferraioli[2]

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This study explores physiological indicators associated with consumer preferences through the use of electromyography (EMG) of the submental muscle in a virtual supermarket context. By observing 60 healthy participants in a simulated environment, the EMG of the submental muscle is analyzed to determine its correlation with preferences scores rated by participants. The submental muscle, part of the suprahyoid muscle group involved in chewing and swallowing movements, is studied for its connection with reward valuation circuits. Preliminary results suggest an increase in submental muscle activity for preferred and more appetizing products, indicating a predictive potential of this electrophysiological measure in real food choices. This research offers new insights into the physiological bases of consumer preferences, highlighting the importance of the submental muscle as a predictive index in purchase decisions in complex environments.

Keywords: Consumer Preferences; Electrophysiological indices; Virtual Reality; Food Choice; Reward System

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Lunch & Poster 3 / 366

Does the brain employ mouth movements to predict upcoming words?

Author: Giorgio Piazza[1]

Co-authors: Simone Gastaldon [1]; Francesco Vespignani [1]; Sara Carta [2]; Giovanni M. Di Liberto [2]; Francesca Peressotti [1]

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Humans possess remarkable abilities to comprehend spoken language during face-to-face interactions. This can occur thanks to the brain's ability to take advantage of linguistic and extra-linguistic cues to continuously integrate incoming information and predict elements at various levels 1. Previous research has shown dissociable neural signatures of meaning and sound predictions of upcoming words 2. Moreover, it has been reported an improvement in the processing of multisensory signals, where visual mouth cues were combined with speech, compared to auditory input alone 3. However, the extent to which observable mouth movements influence predictions during naturalistic speech remains largely unexplored. This study investigates the impact of audiovisual integration on predictive mechanisms, focusing on whether mouth movements contribute to predictions. EEG data will be recorded from 25 Italian participants watching continuous Italian narrative videos with the mouth visible or covered with a grey rectangle. We will examine the linear mapping between brain signals and visemic (visual respective of phonemes) and semantic surprisal. Surprisal is a measure of how surprising an element is within its context. This will allow us to shed light on whether 1) words are predicted differently depending on the availability of mouth cues, 2) articulatory information conveyed through visemes influences prediction, and 3) these phenomena persist even when the mouth is not visible.

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2 Heilbron et al. (2022). PNAS. https://doi.org/10.1073/pnas.2201968119
3 Crosse et al. (2015). The Journal of Neuroscience. https://doi.org/10.1523/JNEUROSCI.1829-15.2015

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Does psychopathology need vision to develop? A Systematic Review of the Link Between Congenital Blindness and Psychiatric Disorders

Author: Martina Battista[1]

Co-authors: Simona Casale [1]; Clara Gangemi [1]; Davide Bottari [1]; Pietro Pietrini [1]

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Sight is considered the primary sensory modality through which humans interact with and represent the world. However, several studies have indicated that the brain, to a great extent, can still develop its morphological and functional architecture even in the congenital absence of sight (*supramodality*). Congenital blindness (CB) also causes cross-modal plastic phenomena that sustain alternative routes for perceptual and cognitive processes. While cognitive functions have been extensively investigated in CB, the effects of blindness on psychiatric morbidity remain poorly understood. In fact, CB uniquely dissects the role of vision in psychiatric conditions (PCs) implying visual representations (dysmorphophobia, phobias). This systematic review focuses on studies examining individuals who were either completely blind or had minimal light perception from birth, with the primary objective of exploring the comorbidity between CB and PCs. Following a comprehensive search (Pubmed, Scopus), 783 records were considered eligible for further screening. Preliminary findings indicate a relationship between CB and Schizophrenia (SCZ) and CB and Autism Spectrum Disorder (ASD), with other PCs being overlooked. Specifically, evidence suggests a potential protective effect of CB against SCZ, although the rarity of comorbidity cases might also be attributed to the low joint probability of both disorders co-occurring. Also, reported higher ASD prevalence in CB individuals may be influenced by confounding factors. In conclusion, further research is needed to explore the putative influence of CB on the development and maintenance of PCs. Assessing this relationship will shed light on the comprehension of the *nature vs nurture* role in the genesis of psychopathology.

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Evaluating Cognitive Impairment in Idiopathic Normal-Pressure Hydrocephalus through Rey Auditory Verbal Learning Test

Authors: Maria Lucia Maiuolo[1]; Roberto Giorgini[1]; Andrea Quattrone[2]; Aldo Quattrone[3]; Maria Grazia Vaccaro[3]

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The idiopathic Normal-Pressure Hydrocephalus it's a condition of quadri-ventricular active distension associated with cerebrospinal fluid in absence of other identifiable cause. Symptomatology is characterized by balance impairment, urinary incontinence and cognitive impairment and it's attenuated by shunt-surgery with a positive response in 80-84% of cases. There are some improvements

in frontal lobe, memory and visuoconstructive function at six months and at one year and general cognitive improvement 3 months after shunt-surgery . Neuroimage studies show a medial temporal lobe volume reduction that incides on memory impairment. Cognitive deficits are caused by frontal subcortical dysfunction; individuals frequently have delayed processing and impaired frontal lobe function. Generally, symptomatology comprises psychomotor slowing, impairment of attention and concentration, short-term memory impairment and language production and attention reduced, general reduction of processing speed and difficulty to manipulate acquired information. The purpose of this study was to use the Rey Auditory Verbal Learning Test (RAVLT) to examine the learning process involved in immediate and delayed recall, and to investigate whether primacy or recency effects were present in iNPH patients when recalling word lists. The findings revealed a lack of learning during RAVLT trials, as participants did not demonstrate significant improvement in their capacity to recall or repeat the words presented during repeated memorization tasks. This absence of learning suggests potential factors such as memory disorders, distractions, or suboptimal learning methods among the study participants.

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Understanding the Impact of Limb Dominance on Body Representation Following Amputation: Insights from a Behavioral Study

Author: Cristina Russo[1]

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Previous findings show a strong involvement of the right dominant limb on the Body Schema (BS), a sensorimotor body map: a dominant body part is recognized faster than the non-dominant one in a mental rotation task (e.g., 'feet dominance effect'). Although the reorganization in the left hemisphere strongly impacts the body processes involved in motor control, further investigations must clarify the effects of dominant limb amputation on other body representations, as on the one coding visuospatial inputs (Body Structural Representation, BSR).
This study assessed the BSR changes occurring as a function of the dominant or non-dominant lower limb amputation.
Twenty-five participants (22 males; 13 with right amputation; age: 42.6±11.4) underwent a task implicitly investigating the BSR.
Participants responded manually to the colour of task-relevant stimuli superimposed upon non-task-relevant pictures of feet and hands.
Faster reaction times (RTs) were expected for the body parts envisioned on the same side of the space of the task-related response key (e.g., 'Sidedness effect').
Results confirmed the consistency of the Sidedness effect ($F(1,23)=7.32$; $p=.01$, $\eta 2g= .003$) but showed significantly slower RTs in participants with dominant amputation compared to those with non-dominant amputation ($W= 187$; $p=.002$; $\delta=.23$).
The Sidedness effect supports the hypothesis that amputees can implicitly access BSR. However, in the case of right dominant limb amputation, the access appears to be more demanding as it requires a massive and general cortical reorganization in the left hemisphere, which is acknowledged to be more involved in body processing.

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Spatial orientation and cognitive maps: piloting a new, virtual tool

Authors: Alberto Umiltà[1]; Alessia Tessari[None]; Ford Clayton Burles[2]; Giorgio Li Pira[1]; Giovanni Ottoboni[None]

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Recent advancements in virtual reality (VR) have provided new avenues for investigating cognitive processes, particularly spatial orientation and creating cognitive maps. This study aims to develop and validate a Virtual Spatial Configuration Task (VSCT) within a VR environment using the established Spatial Configuration Task (SCT) paradigm. The classical SCT involves participants identifying the camera's location among five stationary geometric objects displayed on a screen environment, facilitating spatial mental representation formation.

In the VSCT, participants (N=7) navigate a VR environment, exploring their surroundings limited through eye and head movements only.

Participants encounter three objects at a time (two in front and one behind) and must memorize their positions through repeated exploration. Subsequently, participants must recall the spatial positions of these objects. The control group (N=7) undergoes the Rey Auditory Verbal Learning Test (RAVLT), a standard verbal memory assessment.
We expect that accuracy performance will be similar in SCT and VSCT, validating the efficacy of the latter. Moreover, we anticipate better performance at the SCT for the experimental group, given the immersive nature of VSCT.

A preliminary analysis (N=7) of participants to assess VSCT accuracy, compared to the already validated SCT. A positive correlation emerged between accuracy scores on SCT and VSCT, R (df5) = 0.93, p = 0.0019, but not between RAVLT and SCT.

Results are anticipated to validate the efficacy of the VSCT as a cognitive assessment tool and shed light on the potential of VR technology in stimulating spatial cognitive processes

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Moral predictors of antivaccination attitude in the Italian COVID-19 post pandemic era

Authors: Antony Casula[1]; SIMONA MASSIMINO[2]

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Background. Vaccine hesitancy encompasses a complex attitude intertwined with social, cognitive, and affective processes not clearly understood. We aimed to provide new insights to the field by focusing on the role of ethical appraisal in vaccine hesitancy.
Methods. We utilized the Moral Foundations Questionnaire (MFQ) and a set of moral dilemmas to investigate potential links between explicit measures of moral appraisal such as moral reasoning and moral decision making and vaccine hesitancy (VH), as measured by the adult Vaccine Hesitancy Scale. Furthermore, we investigated whether Misinformation susceptibility about COVID-19 could affect the aforementioned link.
Results. The MFQ results document a higher endorsement of authoritarianism in individuals with high VH than low VH, in contrast to the previous literature. The Moral dilemma results document a negative relationship between the tendency to apply incidental (but not instrumental or filler) moral dilemma resolutions and VH scores, regardless of moral judgement, emotional valence and arousal associated to the dilemmas. Additionally, a moderation effect of misinformation susceptibility about COVID-19 showed that only in highly (+1SD) and medium (but not low, i.e., -1SD) informed people VH scores are negatively predicted by the tendency to apply incidental dilemma resolutions.
Discussion. These results extend current research in the field by showing that that moral decision-making and misinformation susceptibility about COVID-19 are predictors of a larger hesitancy to get vaccinated in the COVID-19 post-pandemic era.

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Increasing emotional distancing with prism glasses: dissociated gender and adaptation direction effects on alexithymia in healthy individuals?

Authors: Alessandra Falzone[1]; Carmelo Mario Vicario[2]; Chiara Lucifora[3]; Laura Culicetto[4]; Massimo Mucciardi[5]; Selene Schintu[6]

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Emotional processing is closely linked with spatial attention, which tends to prioritize emotional stimuli over neutral ones. The brain network responsible for directing spatial attention towards different sectors of the space also play a role in processing emotional stimuli. Recent evidence has identified a connection between the rightward shift in spatial attention, assessed through the line bisection task, and the challenges in comprehending one's own and others' emotional states—referred to as alexithymia.
Based on this evidence, this study hypothesized that alexithymia, might be affected through prismatic adaptation (PA), a standard protocol to modulate visuospatial attention.
A sample of 103 participants completed alexithymia questionnaires, Toronto Alexithymia Scale (TAS-20) and Perth Alexithymia Questionnaire (PAQ), in a counterbalanced order before and after a prismatic adaptation session (leftward, rightward, or neutral deviating prisms).
Results showed that leftward PA significantly increased alexithymia scores in healthy individuals, with a selective effect in women compared to men.
Our preliminary results suggest that the attentional shifts induced by leftward PA not only affect spatial tasks, but also emotional processing, particularly in how individuals perceive and interpret emotional proximity and distance. Consequently, alexithymia may be metaphorically likened to an impaired perception of emotional closeness and remoteness.

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Delving into cooperativeness for deconstructing moral judgments in self-sacrificial dilemmas under time constraints: preliminary results from a preregistered study.

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Co-authors: Simone Cutini [2]; Marta Caserotti [2]; Andrea Spoto [3]; Luca Pelliccia ; Nicola Cellini [4]; Michela Sarlo [5]; Lorella Lotto [1]

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Moral dilemmas often force individuals into high-conflict situations where reaching a satisfactory resolution proves elusive. Sacrificial dilemmas, particularly, require individuals to grapple with the prospect of sacrificing one or more lives, often endorsing a utilitarian approach to prioritize the greater good. Despite contemporary challenges necessitating individuals to make utilitarian but self-sacrificial decisions (the dilemma of autonomous vehicles or AV dilemma), the permissibility of such acts remains undervalued. Additionally, the role of time availability in moral judgments is complex and sometimes controversial, with studies suggesting increased use of decision heuristics under time pressure. This study aims to elucidate moral objectives in self-sacrificial AV dilemmas, hypothesizing a direct influence of time availability on moral judgment and a moderating effect of cooperativeness.

We developed a modified version of the three-person Ultimatum Game, alongside personality scales measuring cooperativeness (Cooperativeness and Competitiveness Personality Scale, CCPS, and the Social Value Orientation slider, SVO). Participants also responded to three sacrificial AV dilemmas under different time conditions (time pressure, time delay, or no constraints). We anticipate cooperativeness may moderate the impact of decisional time on utilitarian resolutions, suggesting deliberative processes could enhance utilitarian judgments, with individual tendencies toward cooperation clarifying this relationship. Data collection is ongoing, and preliminary results will be presented. The study was preregistered on the Open Science Framework (https://osf.io/rxk6v).

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Fluctuations of Responsiveness in Minimally Conscious State patients: an EEG and ECG study

Author: Valentina Galiotta[1]

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Minimally Conscious State (MCS) is a Disorders of Consciousness (DoC) characterized by inconsistent signs of consciousness and fluctuations of responsiveness.
The objective of this study was to investigate the relationship between electroencephalographic (EEG) and electrocardiographic (ECG) indicis and responsiveness in MCS patients.
We involved 15 MCS patients in a multimodal (EEG and ECG) resting-state monitoring, divided into 2 two-hours sessions (morning/afternoon). During the monitoring an auditory oddball paradigm was presented (5 times in each session) and we defined the presence of a Windows of Responsiveness (WoR) based on the variability of amplitude and latency of the P300 component of the Event-Related Potential in response to the oddball task. We defined a WoR as a moment of higher responsiveness with respect to a NoWoR (i.e., a moment of lower responsiveness).
We found a significant difference between WoR and NoWoR in Heart Rate (HR, $Z=2.21$, $p<.05$), Hearth Rate Variability (HRV, $Z=2.30$, $p<.05$) and Power Ratio Index (PRI, $Z=2.93$, $p<.05$) and a significant correlation between PRI and both HR ($R=-0.26$, $p<.05$) and HRV ($R=0.32$, $p<.05$).
According to these results, we demonstrated that HR, HRV and PRI could be suitable indices of responsiveness. These results will contribute to characterizing WoR from a neurophysiological perspective and in identifying the best moment to interact with patients, also with the support of a passive Brain-Computer Interface (i.e., a device automatically detecting covert cognitive and emotional states by recording users spontaneous brain activity without requiring any secondary tasks).

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Exploring the Complex Interplay between Cognitive Reserve, Emotional States and Cognitive functioning

Author: Daphne Gasparre[1]

Co-authors: Elisabetta Ricciardi [2]; Chiara Abbatantuono [1]; Laura Prontu [3]; Federica Marocchino [1]; Madia Marika Biasi [1]; Giulia Paparella [1]; Alessandro Introna [1]; Damiano Paolicelli [1]; Romina Barberio [4]; Eleonora Gentile [4]; Alessandro Oronzo Caffò [2]; Maria Fara De Caro [1]; Paolo Taurisano [1]

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Background: Cognitive reserve (CR) offers a compensatory mechanism for cognitive decline in the elderly, incorporating education, occupation, and leisure activities. Emerging evidence highlights the role of whole social context, life experiences, emotional states and leisure actitivies on cognitive abilities. This study aims to explore the role of emotional states in the complex relationship between cognitive reserve and other psychological and cognitive variables.
Methods: N = 285 participants were recruited; a neuropsychological assessment was administered, evaluating cognitive reserve, emotional state, and cognitive abilities. R 4.3.2 software was used to explore the role of emotional state and cognitive reserve, on executive abilities and other cognitive functions.
Results: Notably, partecipants with higher CR scores show lower levels of depression and higher scores on tests assessing cognitive functioning and executive abilities. These findings suggest that emotional states may play a mediating role in the relationship between CR and cognitive performances.
Conclusion: The engagement in leisure activities over time appears to have a positive impact on emotional state, which in turn may contribute to cognitive functioning and executive abilities. These preliminary results highlight the potential benefits of interventions targeting mood, stimulating leisure activities and promoting social engagement for cognitive health in aging populations.

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Generalization of value-driven attention

Author: Deborah Ferrante[1]

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Beyond Top-down and Bottom-up attention, growing evidence has highlighted that neutral stimuli could earn attentional priority when paired with stimuli –appetitive or aversive –that are highly relevant to the individual. This phenomenon, called Value-Driven Attentional Capture (VDAC), has been attested across a wide range of procedures. However, little is known about how broadly this

attentional priority is generalizable to similar stimuli. To this aim, we carried out a study using a new three-step paradigm: (1) through a matching-to-sample procedure, associations between pairs of abstract stimuli were established (2) one member of each pair was paired with a (high or low) monetary reward in a visual search task (3) the other member of each pair (the one that was never directly paired with a reward) was used as a distractor in another visual search task. We hypothesised people would be slower in finding the target in this latter task when the stimulus paired with the high-rewarded one (compared to the stimulus paired with the low-rewarded one) was presented as a distractor. These results would suggest that attentional prioritization could generalize to other related stimuli and may provide a useful model to investigate the failures of cognitive control in clinical syndromes wherein the value assigned to stimuli conflicts with behavioural goals (e.g., addiction).

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FEELING FATIGUE IMPACTS BRAIN RHYTHMS IN POST COVID-19 PATIENTS

Authors: Federico Tucci[1]; Giuseppe Noce[2]; Silvia Mastromarino[3]

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Background: Following contraction of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection, commonly known as Covid-19, and experiencing its symptoms for extended periods (a condition termed "long Covid"), many individuals subjectively report experiencing "brain fog" (e.g., cognitive, and psychiatric disorders, etc.). Among these symptoms, it has been observed that 20%-30% of long Covid patients assessed > 6 months after infection onset exhibit fatigue symptoms associated with poorer sleep quality, depressive symptoms, and subjective cognitive complaints.
The aim of this study was to investigate in further detail the specific alterations of brain rhythms in post-COVID subjects who did not exhibit cognitive and psychiatric disorders but primarily suffered from subjective fatigue.
Methods: Experiments were conducted on post-COVID participants approximately one year after hospitalization for Covid-19 infection. Inclusion criteria comprised a report of "brain fog,"absence of pre-existing cognitive and psychiatric conditions, and absence of current chronic organic disease. Matched healthy controls were also recruited. All participants underwent clinical/neuropsychological assessment (including fatigue assessment) and resting-state electroencephalography (rsEEG) recordings.
Results: More than 90% of all post-COVID participants showed no cognitive or psychiatric disorders, and 75% reported ≥ 2 fatigue symptoms. The post-COVID group exhibited overall lower posterior rsEEG alpha source activities compared to the Control group. This effect was more pronounced in long Covid-19 patients reporting ≥ 2 fatigue symptoms.
Conclusions: In post-COVID patients without cognitive and psychiatric disorders, "brain fog"may be associated with abnormal posterior rsEEG alpha rhythms and subjective fatigue.

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"There's a bug in my plate!"Vicarious Approach-Avoidance and Attitudes Toward Insect-Based Foods

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Insect-based foods represent an intriguing solution to address issues associated with traditional meat diets. However, in Western cultures, there is a predominantly negative attitude towards such foods.

We conducted an experimental study implementing a Vicarious Approach-Avoidance procedure, a subtype of social learning. The aim was to investigate whether and how attitudes towards insect-based foods are influenced by reading short vignettes describing individuals engaging in approach or avoidance behaviors.
We employed a procedure similar to Zogmaister et al. (2023). Each participant read two vignettes: in the first one, the individual uses a voucher received from a promoter to obtain a package of cookies from a brand; in the second one, the voucher for a different brand is thrown away.
Furthermore, half of the participants were told that the cookies were made with insect flour, while the others were not given this information.
The sample consisted of 127 participants. We administered implicit and explicit measures to investigate attitudes, intentions of purchase and consumption, and automatic reactions toward the products while considering individual disgust levels.

The manipulation effectively affected explicit attitudes, $F(1, 111)= 9.82$, $p= .002$, $\eta 2p= .04$, and intentions of purchase and consumption, $F(1, 125)= 9.27$, $p= .003$, $\eta 2p= 0.01$, with participants expressing higher scores towards products associated with approach compared to those associated with avoidance behaviors.

The study enriches the literature on the effect of the Vicarious Approach-Avoidance procedure, particularly providing evidence that the procedure remains effective even when products that could elicit adverse reactions in participants are involved.

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Art & Environment: the evaluation of beauty and meaning between art and nature, and their effects on environmental intentions and behavior.

Author: Eduardo Naddei Grasso[1]

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Environmental issues represent one of the most important topics on the world's political agendas today. Specific features of art, such as its ability to evoke emotions or the space for reflection offered to the spectator, are said to differentiate this form of communication from standard climate change communication (Klöckner, 2015), functioning as an emotional motor of behavior change (Roosen et al., 2017). However, little empirical evidence exists that directly addresses the impact of art on environmental behavior (Blasch & Turner, 2015).
In the present work, we search for effects of art in addressing environmental issues. Specifically, we aim to investigate the role of visual environmental art in enhancing people's pro-environmental intentions and behavior, comparing environmental artworks with non-artistic pictures of nature. The environmental artworks concern plastic waste installations, while the pictures of nature reproduce the same scenario without the artistic component. Participants are asked to evaluate beauty and meaningfulness for each image. Before the lab session, individual differences for participants' environmental attitude are assessed. To measure intentions for pro-environmental behavior, pre-and-post exposure questionnaires are collected. Finally, participants receive a one-hundred euros lottery ticket, and they can decide to keep it or to donate it to an environmental association.
Beauty of nature can trigger positive emotions and prompt sustainable behavior, while the effect of environmental art visual imagery is still unclear. Exploring the variation between the two conditions, we expect the responses to be affected by individual differences such as environmental and recycling attitude, subjective norm, perceived control, and art interest.

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Exploring Sex-Related Differences in Emotional Processing Through Verbal Analysis: A Study Utilizing the Toronto Structured Interview for Alexithymia and Natural Language Processing

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The translation of emotional experience into words is associated with language style, as narratives fully reflect emotional processes. During narration, while a symbolic verbal dimension organizes the

word sequence, a sub-symbolic verbal dimension influences prosody, meter, and rhythm. Therefore, the symbolic and sub-symbolic verbal analysis of narratives provided through an interview measuring the ability to identify and describe emotions - the Toronto Structured Interview for Alexithymia (TSIA) - represents a powerful tool for revealing emotional processing. On this basis, verbal analysis of narratives provided by men and women, interviewed through the TSIA, could be a potent tool for revealing any sex-related differences regarding emotional processing. In the present study, a small sample of healthy adult subjects of both sexes (12 men and 10 women) was recruited, and their ability to regulate, express, and identify emotions was analyzed using the TSIA and a series of self-report psychological questionnaires, such as the Attachment Style Questionnaire, the Emotion Regulation Questionnaire, the Coping Orientation to the Problems Experiences, the Beck Depression Inventory, and the State-Trait Anxiety Inventory-2. The Big Five Questionnaire was also administered for personality trait assessment. Transcriptions derived from the TSIA of men and women were analyzed using Natural Language Processing (NLP). The NLP technique allowed the extraction of various linguistic features to test the NLP actual differentiation ability between women and men based on their verbal expression of emotions. Using a Machine Learning approach, psychological assessment was then combined with linguistic results to better interpret the descriptive features produced by NLP

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Emozioni tridimensionali: I Video Volumetrici per l'assessment psicologico

Author: Gloria Simoncini[1]

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Le emozioni ricoprono un ruolo cruciale nel plasmare le modalità con cui gli individui si adattano all'ambiente circostante. Nell'ambito dell'assessment psicologico, le competenze di riconoscimento delle proprie emozioni sono per lo più state indagate attraverso questionari self-report. Tali strumenti richiedono agli individui sufficienti abilità di auto-consapevolezza e astrazione per poter fornire una valutazione di sé che rispecchi le effettive competenze possedute. È da notare tuttavia che problemi di auto-consapevolezza, di descrizione ed espressione delle emozioni sono tratti di processi emotivi disregolati che definiscono condizioni come l'alessitimia, i disturbi del comportamento alimentare, l'autismo.
Per poter effettuare un assessment ecologico delle abilità di riconoscimento delle emozioni provate dal singolo, le nuove tecnologie possono costituire un valido strumento di ausilio. Tra queste, si sta affermando la tecnologia dei video volumetrici (VV); essi sono un metodo innovativo di visualizzazione che converte video in tempo reale in ologrammi. La procedura prevede l'uso di diverse telecamere per catturare i dati volumetrici dei corpi, creando così una rappresentazione tridimensionale della scena. La natura immersiva dei filmati aumenta il coinvolgimento degli spettatori, offrendo un livello di esperienza unico.
Sfruttando i VV, il nostro obiettivo è quello di sviluppare un nuovo strumento di assessment delle abilità di riconoscimento delle proprie emozioni da parte dell'individuo. Per fare ciò, sono stati

sviluppati appositamente dei video volumetrici raffiguranti situazioni di vita quotidiana, tenendo in considerazione differenti aspetti contestuali, quali l'ambientazione e l'interazione, ed emozionali, quali livello di arousal e grado di valenza.

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Do Hand Gestures interact with Random Number Generation?

Author: Glenn De Muynck[1]

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Several studies show that spatial cognition interacts with numerical cognition in various ways. For instance, numbers interact with space through manual movements, where smaller numerical magnitudes are associated with precision vs. power grips. One of the tasks used to probe mental number space associations is random number generation (RNG). Studies show that participants generate larger numbers when moving their heads to the right or upwards. Furthermore, recent observational studies demonstrate that people frequently use gestures when talking about numerical quantities.

In a pre-registered study, we explored whether performing natural manual gestures could modulate RNG: greater quantities may be more likely to be generated during outward-moving gestures and lesser quantities during inwards gestures. Further, we aimed to explore whether this association is modulated by both mathematical expertise, assessed by collecting numeracy data through the Subjective Numeracy Scale (SNS), and propensity to gesture, as assessed by the Brief Assessment of Gesture scale (BAGS). Preliminary results (N = 60) support our hypothesis, showing that higher random numbers are more frequently produced with outward movements, while lower random numbers are more frequently produced with inward movements. However, so far, no significant correlations have been found between individual differences, as measured by numeracy (SNS) and gestures (BAG) scales, and the magnitude difference between conditions. To gain a clear understanding of the role of expertise in this effect, we aim to strengthen the individual differences, involving participants with different mathematical backgrounds and varying cross-cultural propensities to gesture (e.g., Italian vs. English individuals).

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RECODE: a new, open access, computer-based platform for cognitive stimulation in Italian

Author: Vincenzo Livoti[1]

Co-authors: Giulio Contemori [2]; Eleonora Macchia [2]; Adele Ravelli [3]; Zaira Romeo [4]; Marianna Noale [4]; Giorgia Rotundo [5]; Alessandro Bettin [5]; Daniela Mapelli [5]; Mario Bonato [6]; Maria Devita [7]

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Increasing evidence suggests that cognitive stimulation (CS) can be beneficial for people with Mild Cognitive Impairment (MCI) and Mild Dementia (MD)1. However, there are only a few computerised cognitive stimulation programmes available in Italian and some of them require long training sessions or expensive softwares and devices (e.g. virtual reality)2. We developed a free and easy-to-use computer-based platform, which could be administered from the patient's home. The REmote COgnitive stimulation for DEmentia (RECODE) does not need dedicated software as it runs entirely in the browser and can be easily shared and modified through the open-access source code. RECODE activities are divided in six main cognitive domains (attention, memory, language, executive functions, working memory and spatial-temporal orientation) randomised at each access. The different tasks are a digitalized adaptation of the paper-and-pencil exercises from the well-known and widely used CS program by Bergamaschi et al. 3. Each participant (or their caregiver) accesses the activities through a personal link, allowing an adaptive procedure to select the most appropriate level of difficulty based on the scores previously obtained. The patient's responses are collected via standard keyboard and mouse. Feedback is provided after every 20-minute session, and it includes a domain-specific average score and a total score (sum of all exercise scores weighted out of 10). RECODE records a personal activity log that allows the clinician to track performance improvements. Data collection with MCI and MD patients is ongoing for validating the software.

If you're submitting a poster, would you be interested in giving a blitz talk?:

Yes

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Lunch & Poster 3 / 387

The dyadic invariance of the parent version of the Elementary School Abbreviated Math Anxiety Scale in parental dyads

Author: Laura Di Leonardo[1]

Co-authors: Maria Anna Donati [1]; Costanza Gori [2]; Sofia Santisi [1]; Caterina Primi [1]

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Assessing measurement invariance is crucial for ascertaining whether observed differences in a construct genuinely represent differences between groups or arise from inconsistencies in the measurement process. Among the various types of measurement invariance, dyadic invariance represents an important assumption to test before comparing values among individuals within a dyad. Dyadic invariance involves modeling observed and latent factors in each group into a single structure while accounting for intercorrelations between dyad members by incorporating covariances between the cross-group latent factors and item error pairs. The study aimed to examine the dyadic invariance of the parent-proxy Elementary School Abbreviated Math Anxiety Scale (Caviola et al., 2017; Primi et al., 2020) across reports provided by mothers and fathers. The parent version of the ES-AMAS (ES-AMAS-P) was administered to 550 dyads of mothers (Mage = 42.91 years; SD = 4.99) and fathers (Mage = 45.80 years; SD = 5.63) of children attending primary school (54% female). After verifying that the two-factor factor structure had a good fit in both groups, the dyadic invariance of the ES-AMAS-P between the two members of the parental dyad was assessed. Full dyadic invariance was met, indicating that the ES-AMAS-P works equally for both members of the parental dyad. Our results corroborate the internal validity of the ES-AMAS-P and support the feasibility of administering the scale equivalently to either of the two parents.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Lunch & Poster 3 / 437

The effectiveness of functional Near-Infrared Spectroscopy (fNIRS) for investigating sensorimotor processing in numerical cognition throughout the lifespan.

Authors: Sara Noacco[None]; Simone Cutini[1]; Mariagrazia Ranzini[2]

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Numerical skills are crucial in various daily life activities, such as activities involving money, understanding numbers and mathematical concepts, comparing magnitudes, and performing calculations. The established link between number processing and sensorimotor mechanisms related to hand actions is well-documented in behavioral research. Embodied cognition theories propose that sensorimotor processes form the foundation for mental representations of numbers. According to action-based theories of cognition, number abilities develop dynamically through interaction with the environment, such as representing numbers, counting, or using fingers for calculations. How can we predict numerical abilities by observing sensorimotor activity across the lifespan?
In this regard, Functional Near-Infrared Spectroscopy (fNIRS) serves as an excellent investigative method for exploring the link between numbers and sensorimotor action across all age groups. The fNIRS is a non-invasive neuroimaging technique that enables monitoring of brain activity by measuring changes in the concentration of oxyhaemoglobin and deoxyhemoglobin in the blood. It provides an effective compromise between spatial (approximately 1 cm) and temporal (approximately 10 Hz) resolution, and demonstrates relative tolerance to movement artifacts. It is non-invasive, and allows testing without physical constraints, offering a promising opportunity to study the neural correlates of sensorimotor and cognitive processing. fNIRS is commonly employed in studies involving children and neonates. Additionally, it is a straightforward technique for testing elderly populations.In this presentation I will shed light on the potential of fNIRS in elucidating the intricate relationship between sensorimotor activity and numerical abilities across the lifespan.

If you're submitting a poster, would you be interested in giving a blitz talk?:

Yes

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience / 356

Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience.

Author: ilaria telazzi[1]

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The investigation of affect has become pivotal across various fields of psychological research, yet measuring affective experience poses some pitfalls. First, affective states, by their fleeting and idiosyncratic nature, are often challenging to define and capture. Second, the intricate interplay between psychophysiological changes and subjective experience has many implications for the measurement of affect. Lastly, different theoretical frameworks on emotions shape the methodology and measurement process, potentially impacting results.
This symposium addresses these issues by exploring diverse methodological approaches to measuring affective experience. The discussion comprises study design (experimental vs. ecological), data sources (biosignals vs. self-reported experience), and methods (quantitative vs. qualitative).
Initial contributes will focus on the categorization of expressive or psychophysiological responses linked to affective states. First, Martina Gnerre will discuss the vocal expression of emotions, exploring how different theoretical approaches impact measurement methods and acoustic features' analysis. Second, Monica Casella will focus on using artificial neural networks to analyze biosensor data related to affective states. Other contributes will focus on approaches that emphasizes variability and individual differences in affective experience. Caterina Vannucci will present findings on emotional complexity and intensity measured through open-ended descriptions of affect and bodily sensations using an experimental study design. Lastly, Ilaria Telazzi will compare methods for ecologically assessing emotional granularity, using both spontaneous language narrations and self-ratings of pre-determined emotional adjectives.
Overall, the symposium seeks to highlight how methodological and measurement diversity enriches our understanding of affective experiences, fostering a nuanced comprehension of underlying mechanisms across contexts.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo / 390

E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo

Author: Paolo Taurisano[1]

Co-authors: Davide Marocco [2]; Davide Rivolta [1]; Onofrio Gigliotta [3]; Valerio Manippa [1]

[1] *Università degli Studi di Bari "Aldo Moro"*

[2] *Università degli Studi di Napoli "Federico II"*

[3] *Università degli Studi di Napoli Fderico II*

Corresponding Authors: davide.marocco@unina.it, onofrio.gigliotta@unina.it, paolo.taurisano@uniba.it, valerio.manippa@uniba.it

Questo simposio è dedicato all'esplorazione del profondo impatto dell'innovazione tecnologica sulla salute cognitiva attraverso vari ambiti di intervento. La prima presentazione approfondirà i metodi di intelligenza artificiale per lo screening precoce e il monitoraggio continuo dei disturbi neurocognitivi negli adulti e negli anziani.
Successivamente, la seconda presentazione si concentrerà sull'utilizzo della robotica per assistere individui con declino cognitivo lieve (MCI) e demenza, evidenziando sia le possibilità che le sfide che questa tecnologia presenta nel caregiving quotidiano.
La terza presentazione si sposterà sulle tecnologie assistive e il loro ruolo nel preservare la riserva cognitiva e promuovere un invecchiamento attivo. Esaminerà come queste tecnologie possano migliorare il benessere e l'indipendenza delle persone anziane.
Successivamente, la quarta presentazione approfondirà tecniche di neuromodulazione, esplorando la sua applicazione sia in soggetti sani che in quelli affetti da MCI, valutando i vantaggi e le implicazioni etiche di questo approccio innovativo.
Offrendo queste prospettive diverse, il simposio mira a promuovere una comprensione completa delle tecnologie per la salute cognitiva e a stimolare il dialogo su potenziali ricerche e progressi nel campo della salute degli anziani e dei disturbi neurocognitivi.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium talk, what's the symposium title?:

E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo / 427

Artificial Intelligence-Driven Motor Pattern Analysis for Early Mild Cognitive Impairment Screening: The E-Move Project

Authors: Roberta Simeoli[1]; Maria Luongo[1]; Nicola Milano[1]; Davide Marocco[1]

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In recent years, there has been growing interest in exploring alternative, objective, and transparent measures as adjuncts to conventional diagnostic tools in the field of clinical and rehabilitative cognitive neurodegeneration. This interest stems from promising findings regarding the application of artificial intelligence (AI) systems for motor pattern analysis, which offer insights into the underlying conditions, their potential prognostic trajectories, and improvements in diagnostic methodologies.
The E-move project is positioned within this research paradigm and proposes the integration of AI systems and wearable technologies to enhance early screening and rehabilitation strategies within the domain of neurodegeneration, with a specific focus on Mild Cognitive Impairment (MCI). E-move is conceptualized as a screening tool that amalgamates conventional psychodiagnostic assessments with novel objective and transparent measurements. These measurements are acquired and analyzed through AI systems that interface with data streams from inertial sensors, cameras, and other

pertinent devices. This approach aims to discern subtle alterations in cognitive behavioral patterns and spatial movement, which are correlated with the progression and precursors of MCI.
The incorporation of AI systems in this context holds promise for the development of advanced neuropsychological assessment protocols, thereby facilitating clinicians in devising more efficacious and timely interventions.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

E-Health: Tecnologie e Innovazioni per l'invecchiamento Attivo

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Interoception, affectivity and cognitive processes / 171

Interoceptive foundations of conceptual representation

Author: Laura Barca[1]

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Corresponding Author: laura.barca@istc.cnr.it

Over the past few decades, interoception, often referred to as the "gut feeling" aspect of being embodied, has gained recognition as a crucial building block for our sense of self and mind. Its importance extends far beyond its well-established role in regulating complex physiological processes and managing energy demands. In my presentation, I will discuss empirical findings from our lab showing how interoception covertly affect conceptual knowledge. In the first study, we elucidate the malleability of the boundaries between different concepts - particularly emotional ones - and how their conceptual representation is shaped by individual characteristics of affectivity, and psychological stressor. By using a similarity judgement task of different concepts, we created two-dimensional "maps" of the affective space along the dimensions of affective valence and physiological arousal. The maps provide a visual representation of the affective space and revealed gender and age-related differences, particularly along the dimension of arousal. In the second study, using a mouse-tracking paradigm, participants performed an interoceptive-exteroceptive categorization of abstract and concrete concepts varying for interoceptive grounding (emotion, philosophical, natural, artifact). Movement trajectories revealed the implicit activation of interoceptive features during the categorization of concrete-natural concepts, thus beyond the abstract-emotional ones. To account for individual variability in attending to bodily signals, participants performed a cardioception task (heartbeat counting task). Those who were more sensitive to their heartbeat were faster in conceptual categorization, particularly in the (exteroceptive) categorization of concrete-natural concepts. Overall, our results highlight the multiplicity of dimensions involved in conceptual knowledge, including the interoceptive ones.

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If you're submitting a symposium talk, what's the symposium title?:

Interoception, affectivity and cognitive processes

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni / 130

Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni

Authors: Monica Bucciarelli[1]; Antonietta Curci[2]; Giuliana Mazzoni[3]

[1] *Università di Torino*

[2] *Università degli Studi di Bari Aldo Moro*

[3] *Università La Sapienza Roma*

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Nell'ambito della psicologia cognitiva, negli ultimi decenni si è fatta sempre più spazio l'idea che la cognizione non possa essere studiata indipendentemente dalla corporeità. Il simposio presenta studi recenti condotti in questa ottica di cognizione situata allo scopo di coprire più approcci teorici e riportarne le ricadute in ambito sociale e applicato. Si farà particolare riferimento alla natura dell' attivazione e della simulazione sensomotoria implicate nella percezione e nel ricordo di azioni osservate o subite, al ruolo del contesto in cui sono inserite le azioni per la previsione sociale, al processo di formazione di nuovi legami sensomotori, attivi sia durante l'esecuzione che durante la percezione di azioni. Gli studi sulla percezione e sul ricordo di azioni osservate hanno ricadute importanti sulle pratiche investigative e forensi, poiché attivazione e simulazione sensomotoria possono comportare anche la creazione di falsi ricordi per le azioni. Inoltre, il contesto in cui sono inserite le azioni può supportare la previsione sociale durante l'osservazione di azioni incomplete e ambigue. Gli studi sul contesto in cui sono inserite le azioni evidenziano il ruolo delle reti cerebro-cerebellari nella previsione dell'azione contestualizzata e nella risonanza motoria. Infine, si deve considerare che molte azioni quotidiane vengono eseguite interagendo con lo schermo dei telefoni cellulari. La differenza generazionale nella capacità di svolgere tali attività nel mondo digitale consente di studiare il processo di formazione di nuovi legami sensomotori, attivi sia durante l'esecuzione che durante la percezione di azioni digitali.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Interoception, affectivity and cognitive processes / 170

Interoception, affectivity and cognitive processes

Author: Laura Barca[1]

[1] *ISTC-CNR*

Corresponding Author: laura.barca@istc.cnr.it

Recent years have witnessed a surge in interest in interoception, the body's internal signaling system. This goes far beyond its well-known role in regulating our physiology and energy demands. It's now understood to be a critical factor in shaping our sense of self and how we think and feel. This symposium delves into the complex relationships between our internal bodily sensations, emotions, and cognitive processes. By drawing on different perspectives, including cognitive sciences, the study of emotions in the brain (affective neuroscience), and the study of mind-body connections (psychophysiology), the four presentations aim to shed light on the mechanisms behind this fascinating interplay. Ultimately, they seek to deepen our understanding of how our emotions and thoughts work together to create our unique human experience.

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Interoception, affectivity and cognitive processes

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No

Symposia: Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni / 192

Collateral effects: the role of sensorimotor simulation on the creation of false memories

Author: Giuliana Mazzoni[1]

Co-authors: Danilo Mitaritonna [2]; Francesco Iani [3]; Mara Stockner ; Monica Bucciarelli [4]; Teresa Limata [5]

[1] *University of Roma La Sapienza*

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[3] *Dipartimento di psicologia, Università degli studi di Torino*

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The main assumption for our studies on perceptiona and memory for actions is that the observation of an action creates a sensorimotor activation/resonance that creates a mental representation of that action that is 'moved forward' in time. The prediction is thus that seeing a person getting ready to perform an action might also create, after a delay, the memory of having seen the forward part of the action. The same effect should not be observed for backward parts of the action. Specifically, memory for actions have been investigated using images representing an actor acting on a series of objects of common use. Participants in a first experiment saw a series of photos of actions being performed on objects (eg. blowing one's nose) and 15 minutes later performed a recognition task. At recognition, they were presented with photos representing backward and forward moments of the action they saw at encoding. Results have shown that participants tended to accept as 'seen' photos of the forward parts of the action seen, rather than photos of backward parts of that action, confirming the hypothesis. In a pilot study, we have also explored the role of temporal distance between encoding and recognition. Results have shown that 3 days after encoding participants did no longer tend to accept as 'seen' forward photos more than backward photos, indicating that the effect is short-lived.

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If you're submitting a symposium talk, what's the symposium title?:

Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience / 227

Capturing emotions in vocal expressions: The impact of different theoretical approaches on acoustic profiles.

Author: martina gnerre[1]

Co-author: Federica Biassoni [2]

[1] *Università Cattolica del Sacro Cuore*

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Over the past two decades, the field of emotion research has experienced significant growth and diversification, resulting in a proliferation of conflicting notions and results. This contribution explores various methodologies and tools for capturing emotions in vocal communication, guided by four prominent theoretical perspectives on emotion: basic emotions theory, dimensional approach, appraisal theory, and the theory of constructed emotion. Each theory seems to prefer distinct methodologies and vocal parameter configurations, potentially leading to divergent outcomes. Basic emotions theory employs acoustic feature identification for straightforward emotion categorization, while dimensional approach considers emotions along underlying acoustic dimensions. Appraisal theory examines how vocalizations reflect subjective evaluations, while the theory of constructed emotion advocates dynamic, context-driven analyses of spontaneous emotional expression. The resulting acoustic profiles are shaped by the underlying theoretical viewpoints, influencing how emotions are measured and acoustically represented. An integrative framework is proposed to reconcile the four perspectives. This underscores the importance of comprehensive synthesis and further research to elucidate the complexity of emotion recognition in vocalizations, with implications for theories of emotion.

If you're submitting a poster, would you be interested in giving a blitz talk?:

If you're submitting a symposium talk, what's the symposium title?:

Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience.

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Yes

Symposia: Interacting with the world: from neurons to social behavior / 90

Interacting with the world: from neurons to social behavior

Author: Lorenzo Ferrucci[1]

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Corresponding Author: lorenzo.ferrucci@uniroma1.it

Every day we interact with the world around us, and our ability to have successful social interaction depends on our ability to integrate different information coming from different social contexts. To this end, studies on animal models can provide valuable insights, offering a controlled environment to investigate neural mechanisms, explore behavioral dynamics, and understand the evolutionary underpinnings of social behavior.
The aim of this symposium is to present recent findings that provide novel insights into how single neurons encode socially relevant variables. Giamundo will talk about the neural processing of vocalizations in primates, showing that neurons in the anterior temporal lobe are modulated not only by the voices of conspecifics but also by human voices, providing new understandings for the study of interspecies communication. Ceccarelli will discuss how the representation of actions performed by others changes dynamically over time, with neurons in the macaque premotor cortex developing an anticipatory response during observation learning. Nougaret's talk will show how the macaque frontal pole is involved in monitoring actions performed by others to change or maintain a choice based on the observed outcome. Finally, Antonelli will discuss how interbrain synchrony is affected

during an emotion recognition task in interacting mice presenting calcium imaging data from the anterior cingulate cortex.
The purpose of this symposium is to advance our understanding of the basic mechanisms of brain functions involved in social interaction, which is crucial to studying conditions like autism, and to develop targeted interventions that enhance the quality of life for affected individuals.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Interacting with the world: from neurons to social behavior / 269

Encoding of voice identity by neurons in the macaque anterior Temporal Voice Area

Author: Margherita Giamundo[1]

Co-authors: Etienne Thoret [1]; Luc Renaud [2]; Pascal Belin [1]; Regis Trapeau [2]; Thomas Brochier [2]; Yoan Esposito [2]

[1] *Neural Bases of Communication Team, Institut de Neuroscience de la Timone, CNRS, Marseille. Institut of Language Communication and the Brain, ILCB; Aix-en-Provence.*

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Social interactions in primates are possible through the ability to extract relevant information from voices, for example their identity. The anterior Temporal Voice Area (aTVA) is a region in the anterior temporal lobe of humans, macaques and marmosets specialized in the processing of voices, but the exact voice information represented by individual neurons in the aTVA remains obscure.
Here we asked how aTVA neurons encode voice identity information. We implanted two rhesus macaques with high-density multi-electrode arrays in their fMRI-localized aTVA. Spiking activity was recorded during an auditory stimulation task in which we presented 50 natural stimuli including 5 different coo calls from each of 5 macaques, and 5 different calls from each of 5 humans.
Preliminary results show that aTVA neurons are modulated by voice identity. Particularly, Representational Dissimilarity Matrices, capturing pairwise spiking activity differences between the stimuli, showed significant association with an ideal categorical model separating between identities and grouping different calls from each identity.
A principal components analysis (PCA) applied to the mean population activity over time revealed that population responses to the same identity followed similar trajectories in the multidimensional state space, with the third PC showing marked differentiation of the different identities in the sustained response and allowing higher accuracy in the discrimination between identities than the other PCs.
These results contribute to elucidating the mechanisms by which abstract representations of identities, allowing speaker recognition, emerge in the primate brain.

If you're submitting a poster, would you be interested in giving a blitz talk?:

No

If you're submitting a symposium talk, what's the symposium title?:

Interacting with the world: from neurons to social behavior

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

No

Symposia: Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni / 238

Falsi ricordi per il tocco: uno studio con il misinformation effect

Author: Federico Puleo[1]

Co-authors: Tiziana Lanciano [2]; Fabiana Battista [1]; Ivan Mangiulli [2]; Antonietta Curci [3]

[1] *Università degli studi di Bari Aldo Moro*

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[3] *Università degli Studi di Bari Aldo Moro*

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I falsi ricordi hanno importanti conseguenze nel contesto forense, specialmente in relazione alla valutazione della testimonianza di azioni ed eventi che coinvolgono toccamenti a livello corporeo (es., molestie). Su questo tema vi è, tuttavia, un gap in letteratura che il presente studio intende colmare, indagando il misinformation effect nella formazione dei falsi ricordi per il tocco. A 112 partecipanti è stato mostrato il video di un'interazione tra docente e studente contenente un tocco a livello corporeo. Successivamente è stato chiesto loro di eseguire un free recall e sono state poste alcune domande sull'interazione, in particolare, sul tocco (parte del corpo toccata, durata, intensità). Il giorno dopo, ad un gruppo di partecipanti è stato somministrato un report suggestivo (si riportava che il professore era solito molestare studentesse e studenti durante il ricevimento), e ad un altro gruppo è stato somministrato un report neutro (si riportava la sua attività di docenza). Subito dopo, i partecipanti hanno eseguito un free recall e hanno risposto nuovamente alle domande sul tocco e sulla responsabilità/gravità dell'azione. In aggiunta, sono state raccolte misure di funzionamento esecutivo e di suggestionabilità interrogativa. I risultati confermano il ruolo del misinformation effect nella formazione di falsi ricordi per intensità e durata del tocco, con un effetto di modulazione delle capacità esecutive e della suggestionabilità interrogativa dei partecipanti.

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Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?:

Symposia: Interoception, affectivity and cognitive processes / 400

From Heart to Gut: mapping cardio-gastric markers of Emotions

Author: Giuseppina Porciello[1]

Co-authors: Alessandro Monti [2]; Maria Serena Panasiti [1]; Salvatore Maria Aglioti [3]

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[2] *1. Department of Psychology, Sapienza University Rome, Rome, Italy*

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Whether we might distinguish emotional experiences by highlighting specific physiological markers is a debated question. Besides cardiac and respiratory indices, gastrointestinal (GI) signals are emerging as crucial indicators of emotional processes. However, direct evidence of this link remains elusive. To assess the impact of endoluminal markers of GI activity on emotions, we asked a group of healthy participants to ingest a pill that measured pH, pressure, and temperature of their GI tract while they were exposed to videos that consistently induced disgust, fear, happiness, sadness or a neutral state. GI makers were complemented by heart rate (HR) and heart rate variability (HRV) recordings, as well as participants'self-reported visceral sensations (gastric, respiratory and cardiac) and perceived emotions. When participants observed fearful and disgusting video clips, they not only experienced sensations related to their heart and breathing, but also felt gastric sensations, such as nausea. We also observed a clear correlation between stomach physiology and perceived emotions. Specifically, when participants viewed disgusting video clips, those with more acidic pH levels reported higher levels of disgust and fear, whereas those with less acidic pH levels reported more feelings of happiness. Additionally, changes in HRV and HR, especially related to disgusting and fearful videos, were found.
By analyzing these results in conjunction with findings from other studies we performed, we highlight how visceral signals can influence both typical and atypical affective processes, shedding light on the complex interplay between bodily sensations and emotional experiences.

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Interoception, affectivity and cognitive processes

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No

Symposia: E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo / 405

Una piattaforma robotica per allenare la memoria negli anziani

Authors: Onofrio Gigliotta[1]; Beth Fairfield[2]

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In un mondo che invecchia sempre più rapidamente le tecnologie robotiche trovano sempre più applicazioni. Da una parte per rimpiazzare la forza lavoro mancante nei settori produttivi e, dall'altra, come strumenti di assistenza per una popolazione che dovrebbe perseguire un invecchiamento di successo. I robot assistivi consentono di implementare degli interventi, non farmacologici, per prevenire il declino cognitivo stimolando attività funzionali e promuovendo
le interazioni sociali e l'adesione ai programmi di training.
La possibilità di automatizzare training di memoria, attraverso robot umanoidi, rappresenta un un campo di applicazione molto promettente in un momento di esplosione di tecnologie legate all'intelligenza artificiale.

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E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo

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No

Symposia: Interacting with the world: from neurons to social behavior / 321

Neural correlates of observational learning in the macaque dorsal premotor cortex during a human-monkey interactive associative task

Author: Francesco Ceccarelli[1]

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Corresponding Author: francesco.ceccarelli@uniroma1.it

Primates have a complex social life that requires monitoring and understanding the actions and choices of the other group members and learning from others' behavior. While previous behavioral studies have shown monkeys' remarkable observational learning abilities, how the information learned by observation is encoded at the neural level has not been studied yet. In this study, we recorded single-unit activity in the dorsal premotor cortex (PMd) while two macaque monkeys performed a human-monkey observational learning task, where the monkeys had to learn to identify the rewarded stimuli located in 4 unique complex scenes generated for each recording session. At the beginning of each session, the monkey was required to observe the human experimenter, showing them the correct stimulus-scene association (Learning period) for 60 consecutive trials. Then, the monkey was tested for the correct learning of associations (Test period) for 15 trials. Finally, the session ended with the experimenter and monkey taking turns performing the task (Interaction period). Both monkeys completed the Test period almost without errors, providing compelling evidence that they had learned the correct associations. We found that the neuronal population in PMd gradually predicted the future human action toward the correct stimulus as the learning period progressed, reaching its highest level during the interaction period. Then, by applying a decoding approach, we found that such representation mutated throughout the learning period, shifting from a dynamic to a static representation. These findings indicate the involvement of the PMd not only in individual but also in associative learning through observation.

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Interacting with the world: from neurons to social behavior

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No

Symposia: Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience / 252

Exploring the Influence of Questionnaire Length on Respondent Burden through Biosensor Data: A Multimodal Analysis Using Artificial Neural Networks

Authors: Monica Casella[1]; Francesca Borghesi[2]; Pietro Cipresso[3]; Davide Marocco[1]

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Psychological research frequently relies on Likert-type questionnaires to collect data on psychological traits. While cost-effective and straightforward, the cognitive effort required to complete these questionnaires and the related stress response, known as "response burden," can affect data quality. Response burden includes factors like questionnaire length, complexity, emotional intensity, and presentation format. Our study focuses on the affective correlates of response burden by evaluating its psychophysiological effects. We measured Galvanic Skin Response (GSR) and facial electromyography (EMG) of the zygomatic and corrugator muscles during the completion of two personality tests based on the Big Five theory—one shorter with 44 items and another longer with 132 items. GSR is an indicator of arousal, defined as peripheral sympathetic activation which is linked to emotional engagement or stress. Facial EMG assesses muscle activity: in particular, corrugator muscle activation is linked to the expression of affective states with negative valence, while zygomatic activation is linked to affective states with positive valence. These measures provide insights into how the response burden impacts participants'affective states. To analyze the data, we employed multimodal artificial neural networks, which can integrate various data types, including physiological signals, response times, and direct responses. We hypothesize that there will be changes in respondent affective states due to the response burden, particularly in the latter part of the longer questionnaire. Our approach highlights the importance of multimodal analysis when exploring complex psychological phenomena and emphasizes the need to design questionnaires that take into account the response burden and its psychophysiological correlates.

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Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience

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Symposia: E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo / 154

Temporal gamma tACS and auditory stimulation affect verbal memory in healthy adults

Authors: Valerio Manippa[None]; Michael Nitsche[None]; Marco Filardi[None]; Davide Vilella[None]; Gaetano Scianatico[None]; Giancarlo Logroscino[None]; Davide Rivolta[None]

Corresponding Author: valerio.manippa@uniba.it

Research suggests a potential of gamma oscillation entrainment for enhancing memory in Alzheimer's disease and healthy subjects. Gamma entrainment can be accomplished with oscillatory electrical, but also sensory stimulation. However, comparative studies between sensory stimulation and transcranial alternating current stimulation (tACS) effects on memory processes are lacking. This study examined the effects of rhythmic gamma auditory stimulation (rAS) and temporal gamma-tACS on long-term memory (LTM) and working memory (WM) in 74 healthy individuals. Participants were assigned to two groups according to the stimulation techniques (rAS or tACS). Memory was assessed in three experimental blocks, in which each participant was administered with control, 40 Hz, and 60 Hz stimulation in counterbalanced order. All interventions were well-tolerated, and participants reported mostly comparable side effects between real stimulation (40 Hz and 60 Hz) and the control condition. LTM immediate and delayed recall remained unaffected by stimulations, while immediate recall intrusions decreased during 60 Hz stimulation. Notably, 40 Hz interventions improved WM compared to control stimulations. These results highlight the potential of 60 Hz and 40 Hz temporal cortex stimulation for reducing immediate LTM recall intrusions and improving WM performance,

respectively, probably due to the entrainment of specific gamma oscillations in the auditory cortex. The results also shed light on the comparative effects of these neuromodulation tools on memory functions, and their potential applications for cognitive enhancement and in clinical trials.

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Symposia: Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni / 173

Contextualizing action prediction in the social cerebellum

Author: Cosimo Urgesi[1]

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Social interactions require predicting and anticipating others'actions from observation of their movements. Several studies have shown that observer's motor system is activated by observing others' actions (motor resonance) and is sensitive to subtle kinematic cues that may allow understanding of the overarching intention. However, the context in which actions are embedded may support social prediction during observation of incomplete and ambiguous actions. The cerebellum is involved in generating and updating the internal models subserving the prediction of sensory events and may play a major role in context-based action prediction. I will present a series of studies in which the role of cerebro-cerebellar networks has been explored in contextualized action prediction and motor resonance. First, I will present the results of behavioral and single-pulse Transcranial Magnetic Stimulation studies showing that contextual information may shape motor resonance and is continuously integrated with kinematics to predict the overarching action intention. Then, I will present the results of neuropsychological and neurostimulation studies showing a specific role of the cerebellum in supporting contextualized action predictions. Finally, the translational implications of the involvement of cerebellar processing in social perception will be exploited by testing the effects of either congenital (e.g., pediatric non progressive ataxia) or acquired (e.g., infratentorial brain tumors) cerebellar alterations on action prediction. The results pave the way for an integrated neuromodulation/neurocognitive training of social perception abilities based on the specific computations exerted by the cerebellum.

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Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni

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No

Symposia: Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience / 284

Mental imagery amplifies the intensity and complexity of emotions and the richness of bodily sensations during simulation of experience

Author: Caterina Vannucci[1]

Co-authors: Emily Holmes [2]; Giacomo Handjaras [1]; Giada Lettieri [1]; Luca Cecchetti [1]

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As compared to verbal thinking, mental imagery acts as an amplifier since it is based on mechanisms of simulation, but it is not clear whether it may also augment emotion complexity through richer descriptions of emotion experience. Thus, our study aimed to analyze differences in self-reported emotional experience, by comparing affect intensity and indexes of emotion complexity in response to mental images (MI) versus verbal thoughts (VT) starting from pictures paired with a word-cue (PWC). Thirty participants (F=15) underwent a lab-based study with a within-subject design and generated positive or negative MI and VT based on 60 PWC. They were asked to rate affect intensity and give a report of the emotions and bodily sensations experienced, and finally to regulate their emotions, after every mental representation. In response to MI (vs VT, $p<.05$), a linear mixed-effect model including covariates of task compliance and alexithymia showed that participants experienced more intense affect and used more mood words and details of bodily sensations in their reports. Negative valence led to more intense affect and richer descriptions of bodily experience, regardless of the type of mental representation generated. Instead, no significant difference in emotion regulation time was found between MI and VT, or between positive and negative trials. We built on previous literature confirming MI leads to more intense affect. Simulation via MI, as compared to VT, and negative valence may lead to more complex emotional experiences, with no difference in the time needed to regulate emotions.

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Yes

Symposia: Interoception, affectivity and cognitive processes / 187

The evolution of affective neuroscience through the lens of neuroimaging

Author: Luca Cecchetti[1]

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The development of brain imaging techniques, particularly fMRI, has fueled a growing body of research on the neural correlates of affect. This field has flourished, with a vast literature investigating the relationship between in-vivo brain activity and the experience, inference, and regulation of emotions, contributing to the "rise of affectivism" (Dukes et al., 2021).
In this talk, I will present meta-analytic findings obtained from the analysis of ~65,000 brain mapping articles showing that affectivism represents ~11% of the neuroscientific literature. Despite this sizeable interest, I will demonstrate that brain imaging research is biased toward the study of a very

small number of emotion categories, neglecting the full complexity of human affective experience. Recently, researchers began to acknowledge these issues and the broader question of ecological validity in emotion research using neuroimaging.
In this context, the introduction of naturalistic stimuli (e.g., movies, music, and narratives) has broadened the horizons of brain imaging research. In this regard, I will present studies from our and other laboratories demonstrating how the combination of naturalistic stimuli and advanced methods for the analysis of brain activity allowed the study of multifaceted emotional experiences, the relevance of contextual information in emotion elicitation, the dynamics and trajectories in the stream of affect, and the intricate relationship between emotions and sensory processing.
I will conclude by highlighting the aspects that still need to be addressed and the unprecedented opportunities to bridge the gap between basic research and real-world applications.

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Interoception, affectivity and cognitive processes

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No

Symposia: Interacting with the world: from neurons to social behavior / 268

Macaque frontopolar cortex activity during social learning

Author: Simon Nougaret[1]

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The evolution of frontopolar cortex (FPC) has been linked to advanced social skills typical to primates. Until recently, lesion and electrophysiological studies in macaques have revealed its role in exploratory behaviors and self-generated actions. Two of our previous electrophysiological works confirmed and broadened this role. FPC neurons encoded the different stages of a learning process and the choices of others. This other-specific neural substrate was very specific and did not emerge during the interaction with a non-social agent, i.e. a computer performing the action. To go further in the understanding of the FPC functions in social behaviors, we recorded the activity of FPC neurons while macaque monkeys performed two observational versions of a fast-learning task. During this task, monkeys must resolve problems (choosing the correct target out of two presented) after observing a social or a non-social agent trying to resolve randomly the same problem. Behaviorally, monkeys learned in both cases after only one trial, allowing to study the neural bases of these two types of observational learning. Our preliminary electrophysiological results show that during non-social observational learning, the learning stage representation was similar than during individual learning. Only the first presentation of problems was represented differently than the others, possibly reflecting a mental rehearsal of the action. Differently, during social observational learning, the second presentation of problems was different from the later ones. This highlights the differences between the time one extracts information from other's action with the moment one uses information previously extracted.

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Symposia: E-Health: Tecnologie e Innovazioni per l'Invecchiamento Attivo / 414

Riserva cognitiva e tecnologie assistive: sfide e soluzioni per un invecchiamento di successo

Author: Paolo Taurisano[1]

Co-authors: Chiara Abbatantuono [2]; Daphne Gasparre [2]; Madia Marika Biasi [2]; Maria Fara De Fara

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Intendiamo indagare e approfondire le importanti connessioni tra riserva cognitiva, invecchiamento e tecnologie assistive nell'ambito della salute mentale degli anziani. La riserva cognitiva si riferisce alla capacità del cervello di compensare il declino cognitivo associato all'invecchiamento, offrendo una preziosa possibilità di posticipare i sintomi della demenza. Tuttavia, per sostenere questa riserva è necessaria una strategia completa che comprenda uno stile di vita sano, l'impegno cognitivo, l'istruzione e la partecipazione sociale.
Inoltre, l'integrazione di tecnologie assistive come gli smartwatch può sostenere notevolmente la riserva cognitiva e prevenire il declino cognitivo. Queste tecnologie forniscono suggerimenti, feedback e supporto su misura, adattandosi alle capacità e alle preferenze di ogni persona. Le informazioni tratte dalla letteratura esistente e dalla nostra ricerca offrono una base per esplorare l'importanza di incorporare metodi all'avanguardia e tecnologie avanzate per affrontare il declino cognitivo legato all'età, aprendo la strada a nuove possibilità per la salute cognitiva durante l'invecchiamento.

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No

Symposia: Interoception, affectivity and cognitive processes / 416

Exploring psychophysiological processes in stress responses: from gastric to interpersonal dynamics

Author: Vanessa Era[1]

Co-authors: Arianna Vecchio [2]; Martina Fusaro [1]; Sofia Ciccarone [1]; Maria Serena Panasiti [1]; Cristina Ottaviani [1]; Chiara Fini [3]; Giuseppina Porciello [1]; Salvatore Maria Aglioti [4]

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[2] *2 Social Neuroscience Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy*

[3] *3 Department of Dynamic and Clinical Psychology and Health Studies, Sapienza University of Rome,*

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Stress triggers a complex cascade of physiological and psychological responses, affecting not only bodily functions like the gastrointestinal (GI) system but also cognitive processes such as self-focused attention, and eventually social interactions. Despite the common experience of stress-related GI symptoms, objective evidence on its impact on enteric functions in humans remains scarce, primarily due to monitoring challenges involving invasive methods. To address this gap, we employed non-invasive, biocompatible sensor-equipped pills in a study involving 36 participants, monitoring GI parameters during stress-inducing virtual reality (VR) scenarios. Our investigation revealed that perceived stress was associated with less acidic gastric pH, likely because of heightened sympathetic activity suppressing gastric secretion.
Moreover, scientific literature suggests that stress also enhances the focus on self-related negative affect, potentially influencing interpersonal relationships. The extent and mechanisms through which stress affects social interactions remains unexplored. In a separate study involving 49 healthy participants, we investigated the effects of stress-induced intrusive thoughts on interpersonal dynamics. Participants engaged in either a stress induction (in the form of perseverative cognition) or a control condition, and then they interacted online with another individual. Interpersonal dynamics were assessed in the forms of interpersonal physical and psychological closeness and automatic imitation. Results showed that an increased subjective perception of perseverative thoughts was associated with a reduced preference for physical closeness.
These studies provide valuable insights into psychophysiological effects of stress, elucidating it impacts on individual well-being and social behavior. Furthermore, they highlight the importance of developing non-invasive methods to further explore the underlying mechanisms.

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Interoception, affectivity and cognitive processes

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No

Symposia: Interacting with the world: from neurons to social behavior / 313

Emotions modulation on interbrain dynamics

Author: Federica Antonelli[1]

Co-author: Francesco Papaleo [1]

[1] *Istituto Italiano di Tecnologia*

Corresponding Author: federica.antonelli@iit.it

Social interactions imply dynamic and synergic feedback loops in which actions, reactions, and internal states of each partner is modulated by the others. In this framework, interacting brains appear to operate as an integrated system, showing shared neural dynamics coevolving over time. In-phase brain oscillation alignment have been found in interacting people, but also in monkeys, bats, and mice. However, how emotional alterations can influence interbrain synchrony (IBS) is still unclear. Here, combining microendoscopic calcium imaging within the Anterior Cingulate Cortex (ACC or Area 24) with a behavioral task for emotion recognition in mice, we find differences in IBS between pyramidal and somatostatin-expressing (SOM) neurons. SOM neurons show stronger correlation between a neutral observer and a stressed demonstrator. Moreover, disrupting SOM synchronization in ACC by optogenetics disrupts emotion recognition. Conversely, ACC pyramidal neurons show stronger interbrain correlation only in basal states (neutral-neutral interactions) and an anticorrelation with the socially-preferred stressed mouse. In agreement, artificial pyramidal neurons synchronization by optogenetics can induce a preference toward the non-synchronized mouse. Overall,

these data reveal opposite involvement of ACC SOM and pyramidal neurons in interbrain synchronization in supporting emotion recognition.

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Interacting with the world: from neurons to social behavior

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No

Symposia: Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni / 258

Le azioni digitali: una nuova sfida per la embodied cognition

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È noto da tempo che lo scopo finale dell'azione influenza la sua esecuzione. Ad esempio, quando afferriamo una bottiglia, la posizione delle dita cambia a seconda della nostra intenzione, come versare, spostare, o lanciare. Siamo inconsapevoli di queste differenze in esecuzione, e siamo inconsapevoli che l'osservazione delle medesime azioni attiva il nostro sistema sensorimotorio in modo congruente. Questa replica automatica e sottosoglia motoria dell'azione osservata comporta la capacità di riconoscere l'intenzione dell'altro. Maggiore è l'abilità nell'eseguire l'azione osservata, maggiore è la capacità di prevedere gli esiti delle azioni altrui (Aglioti et al., 2008).
Al giorno d'oggi moltissime azioni quotidiane vengono eseguite non più nel mondo fisico ma interagendo con lo schermo dei telefoni cellulari. Mentre le nuove generazioni hanno acquisito la capacità di svolgere tali attività direttamente nel mondo digitale, le vecchie generazioni, abituate a eseguirle nel mondo fisico, devono adeguarsi e imparare. Questa differenza generazionale è fondamentale per studiare il processo di formazione di nuovi legami sensorimotori, attivi sia durante l'esecuzione che durante la percezione di azioni digitali.
Determinare come il progresso digitale influenzi i processi sensorimotori e cognitivi è una sfida necessaria per le neuroscienze comportamentali contemporanee. Tuttavia, la letteratura a riguardo è ancora estremamente povera. Il presente contributo descriverà i dati sperimentali disponibili che mostrano notevoli differenze tra le coorti generazionali sia per quanto riguarda i parametri cinematici e l'efficacia di interazione con lo schermo, che la capacità di riconoscimento delle azioni digitali degli altri.

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Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni

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No

Symposia: Breaking Boundaries: Addressing Diversity in Methodological Approaches to the Measurement of Affective Experience / 217

Addressing Discrepancies in the Assessment of Emotional Granularity: Development of a Novel Method Using Open-Ended Descriptions.

Authors: ilaria telazzi[1]; Stefania Balzarotti[1]

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Emotional granularity (EG), the ability to differentiate between specific emotions with a high level of complexity and precision, is commonly assessed behaviorally through experience sampling methods (ESM). Participants rate the intensity of their momentary emotions over several days, and their ratings are then used to compute an EG index via within-person intraclass correlations (ICCs). Recently, an alternative approach has been developed to code affective natural language descriptions using two indices, namely the specificity index and the nuance score. Yet, these two measures overlook some relevant aspects, such as the actual richness and variability of affective vocabulary. Moreover, preliminary findings suggested that EG as computed via ICCs is unrelated to both the specificity index and the nuance score.

The present study proposes a novel mathematical derivation of an EG index calculated from open-ended descriptions of emotional states. Moreover, we explore whether the ICCs EG index correlates with EG assessed through natural language descriptions.

Sixty females suffering from chronic pelvic pain participated in a 1-month diary study. For each pain episode, participants freely narrated their pain experience focusing on its affective correlates and rated their affective experience using a set of 14 negative emotional adjectives.

Concerning results, we expect that EG measured via predetermined adjectives will be unrelated to the specificity index and the nuance score but will correlate with our new derivation. This study may provide new evidence about the different methods commonly used in EG assessment to determine if they yield comparable results and are, therefore, equally valid.

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Symposia: Il ruolo e la natura della attivazione sensomotoria coinvolta nella percezione e nel ricordo di azioni / 465

Discussione

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General open discussion

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Keynote talk, Luca Rinaldi / 463

From apparent chaos to structured mental representations

Author: Luca Rinaldi[1]

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In our daily lives, we are constantly bombarded by a vast amount of information that often appears chaotic. Philosophers and cognitive scientists have long questioned how this apparently chaotic input is transformed into knowledge or mental representations, enabling us to process, store, and manipulate information about the world itself. In my talk, I will first propose that the information we encounter is often not truly chaotic but inherently structured. By quantifying this structure at the input level, I will highlight striking similarities with how the human mind organizes knowledge. Furthermore, I will examine the role of different experiential priors (i.e., linguistic and perceptual) in shaping and structuring this knowledge, shedding light on the cognitive processes that enable us to navigate and make sense of the complex world we live in.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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From uncoscious to conscious: electrophysiological correlates of consciousness during perception and action

Author: Simona Noviello[1]

Co-authors: Alessio Toraldo [2]; David Melcher [3]; Irene Sperandio [1]; Mirko Tommasini [1]

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Perception, awareness, and time have a close relationship that has been investigated for a long time. Here, we replicated a study by Zhu and colleagues (2016), to examine the specific frequency at which CFS can effectively suppress 3D stimuli from consciousness. In CFS experiments, rapidly flashing patterns are typically presented to the dominant eye, while the other eye is directed towards a stationary stimulus. This procedure induces a suppression of the visibility of the unchanging stimulus. In the present study, we used a CFS pattern that changed frequencies across 10 different levels (0, 1, 3, 5, 7, 10, 13, 16, 20, and 32 Hz) in separate trials. Participants were instructed to press a button as soon as they began to see a stimulus break through suppression. This approach allowed us to identify the frequency that elicits the greatest suppression and to calculate the average time required for a stimulus to arise into consciousness. Our results with the 3D stimulus align with those reported by Zhu and colleagues: the optimal frequency to suppress both 2D and 3D stimuli appears to be in the high-theta to low-alpha range, which is related to the temporal frequency of attention and perceptual visual cycles. These findings contribute to our understanding of the mechanisms underlying the suppression of visual stimuli from awareness. We are now using these data for a new study, on the EEG correlates of conscious and unconscious stimuli during perception and action, to study the difference in their access to consciousness.

If you're submitting a poster, would you be interested in giving a blitz talk?:

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Mini-talks / 439

Moral and social nudges for promoting cooperation in wicked social dilemmas: a theoretical and experimental investigation on waste sorting behavior.

Authors: Fabio Paglieri[1]; Marco Marini[2]; Sebastiano Munini[3]

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[2] *IMT School for Advanced Studies Lucca*

[3] *Institute of Cognitive Science and Technology, National Research Council, Rome, Italy*

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Social dilemmas are described as "wicked"when they involve additional obstacles to cooperation, such as unclear individual impact, doubts about the link between cooperation and outcomes, and difficulties tracking contributions. We study the effectiveness of norm-nudging interventions in promoting cooperation in such a scenario: waste sorting. Given the difficulties in implementing economic and reputational incentives in this context, we consider moral and social nudges as cost-effective solutions. While moral nudges appeal to doing the right thing encouraging individuals to prioritize moral values, social nudges motivate to act as the virtuous majority of people. We use a 3x2 between-factor design. Participants are exposed to a moral, social, or no nudge, depending on the experimental condition they are randomly assigned to, and on the same basis, they experience a high or low level of cooperation from other players. The task consists of an 8-round computerized waste sorting game in which, in each round, participants must choose how and if to allocate garbage items in separate bins. Choosing to sort is costly and requires dragging objects in the corresponding bins, while non-differentiating is immediate and only requires pressing a button. Number of waste objects sorted is the main dependent variable. We aim to verify the efficacy of each strategy to promote recycling behaviour, and to understand if strategy efficacy is moderated by experienced level of cooperation. Results will help design targeted interventions to encourage sustainable behaviors.

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Exploring the decision component of the Activation-Decision-Construction-Action Theory within the context of malingering

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The Activation-Decision-Construction-Action-Theory (ADCAT), offers a promising avenue for refining malingering detection. ADCAT is a cognitive model for high-stakes deception that employs a cost-benefit formula to elucidate the cognitive, motivational, and social mechanisms underlying the decision to lie or tell the truth. Building upon existing research, the present study aims to explore the application of the ADCAT cost-benefit analysis across different malingering scenarios, recording both initial and final decisions after the ADCAT Decision protocol application. Results reveal dynamic shifts in participant responses, with increased feigning observed in some scenarios from initial to final decisions, while others exhibit reversals from feigning to honesty. Significant differences in ADCAT scores suggest feigners weigh honesty's advantages but prioritize feigning for benefits. Conversely, honest individuals recognize honesty's disadvantages but prioritize avoiding feigning risks, despite potential benefits. This underscores the ADCAT protocol's capacity for a cost-benefit evaluation, extending beyond binary choice. Furthermore, Discriminant Function Analyses demonstrate robust predictive power for final decisions, with EVHonesty, EVMalingering, and MMalingering significantly contributing to decision outcomes. These findings advance our understanding of decision-making in malingering, emphasizing situational variability and multifaceted motivations.

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Mini-talks / 424

A multi-component visual and C-tactile-mediated, gentle touch assessment of body image disturbances

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Perceptual inaccuracies, such as body size distortions, are key aspects of eating disorders (EDs) and are linked to illness severity. However, it is unclear if this association is related to anhedonia to gentle touch or if perceptual inaccuracies are the prime contributor to EDs risks. Here, we explored whether lower preference for C-Tactile (CT)-mediated gentle touch is a moderator of the relationship between body dissatisfaction (BD, ideal minus current body size estimates) and EDs risks. Sixty healthy females completed a range of psychophysical somatosensory tests which consisted in ratings of pleasantness of CT-optimal (3 cm/s) and CT-suboptimal (0.3 and 30 cm/s) touch applied to varying body sites, for directly experienced touch (Experiment 1) and for vicarious interpersonal touch (Experiment 2). All participants took part in a computerized body perception assessment,

i.e., 'Somatomap 3D' of perceived, actual, and ideal aspects of body-part sizes. Self-reports of EDs risk, body dysmorphic concerns and of bodily awareness were also collected. For Experiment 1, a principal component analysis (PCA) on Somatomap 3D BD measures showed that PC1 explained 20.85% of the total variance. A moderation analysis revealed a significant interaction between PC1 and gentle touch preference. As preference for gentle touch decreased, Somatomap 3D BD increasingly predicted EDs risks. A similar analysis for Experiment 2 did not reveal such effects. Overall, our findings suggest the need for a personalized approach for the assessment of individuals' EDs risks in relation to both C-tactile-mediated, gentle touch and perceptual inaccuracies of body-parts components.

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Two- and three-dimensional indicators of green and grey space exposure and mental health in a large Italian cohort

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The aim of the present study was to explore the link between 2D and 3D indicators of green and grey spaces and the prevalence of psychiatric disorders in a large population-based group from Rome, Italy. Data from 593,894 adults (≥30 years) participating in the Rome Longitudinal Study were analyzed. Mental health outcomes were determined through drug prescriptions (such as antidepressants, antipsychotics, mood stabilizers, anxiolytics, hypnotics, and sedatives) or hospitalizations for psychiatric diagnoses (including schizophrenia spectrum disorder, depression, anxiety, stress-related disorders, somatoform disorders, and substance use disorders). Participants' addresses were used to assign exposure to indicators like the Normalized Difference Vegetation Index (NDVI), green and grey volumes, number of trees, and the Normalized Difference Green-Grey Volume Index (NDGG). Cox proportional hazards regression models were employed, and potential effect modification by sex, age, and deprivation index was assessed. Protective associations were found between NDVI and the number of trees and certain medications (such as antipsychotics and lithium), as well as between NDGG and other medications (like anxiolytics, hypnotics, and sedatives). Adverse associations were observed between grey volume and specific medications. The study suggests that higher levels of green space around residences may be associated with decreased use of psychiatric drugs, whereas greater exposure to grey spaces may lead to increased use. Accurately characterizing green and grey spaces is emphasized as important for mental health treatment and promotion.

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Mini-talks: RAGIONAMENTO / 431

Testing psychological models of reasoning on empirical data from the CISIA TOLC-PSI test.

Author: Federica Conte[1]

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Current psychological models of human reasoning use a small set of assumptions to explain and predict the pattern of competence and errors in solving deductive reasoning problems. Here, we test those theories on a large dataset derived from the CISIA TOLC-PSI test, which collected answers to a wide range of deductive problems from over 40000 prospective university students.
The test included four categories of verbal reasoning problems: propositional logic, syllogisms, iterative reasoning, and the definition of necessary and sufficient conditions. Additionally, each problem can be characterized along several dimensions, some shared across the four categories (e.g., logical depth), others category-specific (e.g., the figure of a quantified syllogism). Each participant solved ten problems selected from a pool of 200, for an average of 2000 responses to each problem. Unlike many previous psychological studies that have focused on a narrow range of problem types or relied on relatively small sample sizes, the diversity of the CISIA dataset, encompassing the spectrum of logical complexity, offers a distinctive advantage.
We present results from our two-step approach: first, formalized theory-based predictions of problem difficulty (e.g. that problems involving a greater number of implication schemas, semantic models, or assumptions would be more challenging); second, the comparison between theory-based and empirical difficulty estimates obtained from the application of polytomous Item Response Theory models.

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Lunch & Poster 3 / 351

Riserva cognitiva e stili di attaccamento in giovani adulti. Due studi preliminari.

Author: Denise Chiappetta[1]

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Background: La relazione positiva tra uno stile di attaccamento sicuro e relazioni soddisfacenti, unite a una migliore regolazione emotiva, in età adulta è ampiamente riconosciuta. Le stesse variabili sono anche state riportate come fattori importanti nello sviluppo della riserva cognitiva (RC), che predice un invecchiamento più sano dal punto di vista cognitivo, fisico ed emotivo. Come queste variabili (stili di attaccamento e RC) siano collegate e se sia possibile identificare questa relazione già nei giovani adulti resta da indagare.
Obiettivo: I due studi presentati in questo lavoro puntano ad esplorare questa relazione utilizzando una serie di self-report per misurare la RC e gli stili di attaccamento insieme a un'intervista focalizzata sulle figure di attaccamento nelle diverse fasi di vita, arricchita da dati fisiologici nello studio 2.
Metodi: Lo studio 1 ha visto coinvolti 47 partecipanti (19-29 anni), lo studio 2, 28 partecipanti (18-22 anni). In entrambi gli studi sono state compilate misure self-report di RC (CoRe-T) e di stili di attaccamento (ECR-S). In entrambi gli studi i soggetti hanno completato un'intervista volta ad esplorare le relazioni più significative nelle diverse fasi di vita. Nello studio 2, l'attivazione fisiologica dei soggetti durante l'intervista è stata misurata tramite biofeedback.
Risultati: I soggetti con differenti stili di attaccamento possiedono precursori della RC in misura diversa. Queste differenze sono accentuate in chi è coinvolto o meno in una relazione sentimentale. Individui con diversi stili di attaccamento mostrano differenti pattern di attivazione fisiologica. Possibili applicazioni in ambito preventivo e terapeutico sono discusse.

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Power Analysis and Bayesian Data Analysis in Cross-National Multi-Lab Studies: The Experience of the Many Smiles Collaboration

Author: Marco Tullio Liuzza[1]

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Multi-lab studies, studies that involve different labs in many countries, are a powerful tool to increase the external validity of our results - they increase cultural diversity - and for testing hypotheses whose effect sizes could hardly be studied in a single lab. However, an international collaboration also implies potential sources of heterogeneity in the effect studies, which poses novel challenges to the experimenters and the data analysts who want to properly plan their study through a power analysis while trying to take such heterogeneity into account.
I will discuss conducting power analysis and Bayesian data analysis for the 'Many Smiles' multi-lab study, a cross-country adversarial collaboration to severely test the facial-feedback theory across countries and operationalizations.
First, I will describe the statistical approach and the challenges faced in conducting a simulation-based power analysis within a multilevel modeling framework, and how, together with the rest of the team, we made some assumptions that guided our modeling strategy. Secondly, I will show how we conducted Bayesian data analyses following the data collection, the practical and theoretical challenges posed by this approach, and the added value carried by a Bayesian approach to the conclusions drawn from this approach. Finally, I will reflect on what this experience taught me about what it means to falsify a psychological theory in the context of psychological science.

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The Multiverse of Multi-labs. Methodological and Statistical Aspects of Multi-Lab and Multiverse Studies.

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Mindfulness, self regulation and pro-environmental behaviour

Author: Serena Colombo[1]

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Human responsibility for the environmental crisis has been documented by increasing scientific evidence, and climate change is today a major subject of public concern. Numerous studies have investigated what drives pro-environmental behaviours (i.e. behaviours that seek to minimize the impact of one's actions on the ecosystem), yet most explanations have been criticised for failing to explain the environmental attitude-behaviour gap. Based on evidence indicating that dispositional mindfulness would predict engagement in pro-environmental behaviour, and findings linking mindfulness to enhanced self-regulation, as well as self-regulation to pro-environmental behaviour, we made the hypothesis that mindfulness could contribute to explain why some people seem more likely to behave coherently with their attitudes towards the environmental crisis. To test this assumption, we carried out two correlational studies. The first one assessed, through an online survey (n=228), whether mindfulness would affect the relationship between pro-environmental attitudes and behaviours. Our results indicate that Acting with Awareness and Nonjudging would moderate the effects of pro-environmental attitudes on behaviours, suggesting that increased self-regulation abilities may participate to explain the positive correlation found between mindfulness and pro-environmental engagement. The second study (n=262) assessed whether mindfulness would contribute to explain individuals'emotional response to the climate crisis and their likelihood to embrace an adaptive coping strategy. Our findings show that mindfulness would predict lower climate change anxiety and would moderate the relationship between climate anxiety and pro-environmental behaviour, suggesting that mindfulness may make individuals more prone to adopt an adaptive coping strategy facing the climate change threat.

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