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Early Career Researchers

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Poster Event

Abstracts

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Methodology

1 Dynamic darkness: A primer on community-augmented meta-analyses with PsychOpen CAMA

Presenter: Lisa Bucher

Transparency and timeliness are key requirements for replicable and reusable meta-analytic evidence. However, these aspects are hard to accomplish in highly cited topics, such as the Dark Triad of personality. Recently, community-augmented meta-analysis (CAMA) and other web-based, dynamic concepts have been postulated, addressing these very issues. A CAMA is a meta-analysis stored in an openly available, online data repository, allowing full disclosure and continuous updates to the whole research community. In 2021 – PsychOpen CAMA – a new publication format for CAMAs has been released by the Leibniz Institute for Psychology (ZPID). By using this novel web platform, we implemented six large-scale meta-analytic datasets on the Dark Triad of personality ($k > 400$ effect sizes each), focusing on trait interrelations and sex differences in the three traits: Machiavellianism, narcissism, and psychopathy. This contribution presents a primer on the implementation and use of the CAMA datasets in PsychOpen CAMA from a data provider and user perspective. The poster summarizes the process of data contribution and depicts the main functions of the web application to explore the implemented datasets. Moreover, major benefits, followed by remaining challenges and prospects will be addressed.

2 Totally VALID - A checklist-based approach for improving validity in psychological research

Presenter: Susanne Kerschbaumer

In light of the ongoing replication crisis in our field, the validity of research is a critical factor in determining the quality of study outcomes, whether exploring new questions or replicating previous findings. The Validity Project aims to address this issue by developing a comprehensive checklist to assist researchers in continually enhancing and monitoring the validity of their research. Over the course of three rounds, more than 30 experts in the field of psychological research participated in a Delphi study to develop and validate the checklist. After systematically analyzing previous findings on validity, a comprehensive list of potential checklist items was compiled. Subsequently, this list was subjected to ratings by the participating experts, who were also given the opportunity to propose novel items and enhance the existing ones. This rigorous process resulted in a final set of 90 items, organized according to the stages of a research project. Following publication, the VALID Checklist will be accessible online, providing researchers with an adaptable tool that caters to their specific needs through checkboxes on the website. By focusing on adaptiveness during its development, the checklist encompasses 549 unique variations, making it suitable for a wide range of projects and requirements.

3 A dating app as a data collection engine for behavioral science

Presenter: Gaspar Lukacs

I present the idea of a new open-source and completely free dating app that would serve both as a regular dating app for the general public and as a research tool for data collection in behavioral sciences. With the dramatic increase in online dating and the general reliance on online technologies for forming relationships, there is a growing need for valid methods to study human behavior in this context. While current methods to date are especially limited in terms of ecological validity, this real dating app would provide practically true data on many crucial aspects of preferences, communication patterns, relationship formation, and decision-making processes in dating scenarios. One straightforward possibility is the follow-up of matches via experience sampling methods (using the already installed smartphone app), enabling researchers to capture in-the-moment experiences and perceptions of users during their time spent with matched partners. If widely successful, a large user base could provide vast amounts of data. However, even in the worst-case scenario, where there are no genuine users, the app could serve as a testing environment for researchers, with users being participants recruited in conventional ways. The insights gained from this research could inform evidence-based matchmaking, shape policy decisions, and promote healthy relationship practices. The app's open-source nature would allow the scientific community to contribute to its development, also ensuring reliability and full transparency.

4 Young People's Digital Maturity: Development and Initial Validation of the Digital Maturity Inventory (DIMI)

Presenter: Franziska Laaber

Building on research of psychosocial maturity and self-determination theory, we introduced and investigated the concept of digital maturity as a novel view on young people's digital technology use. We conceptualized digital maturity as the capabilities and attitudes enabling individuals to use digital technologies in ways which support individual development (growth) and integration into society (adjustment). Across three studies ($N_{total} = 1063$, age 12-18), we developed and validated the Digital Maturity Inventory (DIMI). In Study 1, we developed and selected items for the ten dimensions based on exploratory factor analysis. In Study 2, we examined the scale's factor structure and internal consistency using confirmatory factor analysis, and tested a pattern of convergent and discriminant associations with general device use and personality. The results confirmed that digital maturity is linked to personality maturity (agreeableness, conscientiousness, negative emotionality), and a hierarchical linear regression analysis revealed the scale's incremental validity in predicting problematic mobile device use. In Study 3, we validated a Danish version of the DIMI and observed a positive relationship of digital maturity with self-regulation and life satisfaction. Notably, digital maturity but not self-regulation was a significant predictor of life satisfaction. This new measure provides a useful tool for researchers studying positive aspects of young people's digital technology use.

5 Validation of a stimuli set for depicting consequences of climate change and environmental degradation.

Presenter: Lukas Mayrhofer

The aim of this study was to develop a novel set of image stimuli depicting suffering caused by environmental destruction. 240 images showing either people, animals, or landscapes in a neutral or environmental degradation condition (40 images per condition) were extracted from various internet sources. The images were then rated by 97 psychology students for elicited valence and arousal. In addition, the participants were asked how much the images represent "suffering" and how much this suffering is related to environmental degradation in their opinion. Using Euclidean distances, we extracted the 28 most similar images from each category according to mean valence and arousal ratings. Additionally, we took an exploratory approach to investigate which interindividual differences predict the differences in ratings of the images. We show that differences in mean valence and arousal ratings between neutral and environmental destruction conditions were positively correlated with empathic concern from the interpersonal reactivity index (IRI) as well as biospheric and altruistic values of the and negatively correlated with political views. We hope that our image set can facilitate future research about climate change and confrontation with environmental degradation.

6 Harming or helping the climate movement: Effects of civil disobedience by climate activists on societal perception and support

Presenter: Valerie Grzeschuchna

As the climate crisis intensifies, the climate movement introduces new tactics of protest and civil disobedience. Tactics such as occupying buildings or gluing oneself to the street polarize and, some claim, harm the entire climate movement. Research on the effects of such tactics is still scarce and we address this gap in this study. We experimentally test the positive radical flank effect, which describes that introducing more radical group into a social movement can help garner support for the moderate group, because they make the moderate tactics appear more reasonable. We experimentally test this among Austrian non-activists, using a 2 x 2 mixed design. Each participant will read two vignettes, of which one describes moderate tactics used by climate activists, e.g., participating in a demonstration, and one describes more disruptive measures, e.g., blocking a street. We manipulate the order in which participants read the vignettes. Participants will then indicate their identification with the described activists and their perception of and the support for the group depicted, as well as the climate movement in general. Finally, participants can choose to donate their study incentive to a moderate activist group, a radical activist group, or to keep it for themselves. We expect to find lower support for groups that use radical tactics, compared to groups that use moderate tactics (H1). Based on evidence about the positive radical flank effect, we furthermore expect to find bigger support for groups with moderate tactics, if participants were confronted with more radical tactics before versus after (H2). Results will be analysed using ANOVAs and t-

tests. In conclusion, this study will contribute to understanding the social dynamics surrounding different forms of societal protest in the currently highly relevant context of climate activism.

7 From weak victim to strong agent: How reframing marginalized individuals' identity helps refugees, first-generation students and mentally ill individuals successfully pursue their goals

Presenter: Christina Bauer

Diverse marginalized groups such as refugees or individuals with experiences of mental illness are often viewed as weak victims. In failing to acknowledge individuals' strength, this stigmatizing narrative may impair individuals' ability to successfully pursue their goals in life. Countering this narrative, we developed an intervention representing respective groups as strong, resourceful agents. The intervention specifically highlights how i) through their background-specific experiences, people have shown important strengths, such as perseverance or the ability to deal with difficult experiences, and ii) how these strengths can help them successfully pursue their goals. We tested this intervention with members of three marginalized groups – refugees, first-generation college students, and individuals with experiences of depression. We consistently find that the intervention improves individuals' long-term goal pursuit. In a randomized-controlled field study with 533 refugees entering an online-university, the intervention boosted refugees' behavioral engagement in the learning-environment by 23% over one year. In a similar pre-registered study with 462 first-generation students, the intervention improved students' grades over one semester, closing the social-class achievement gap. Beyond academic settings, in a pre-registered study with 211 individuals with experiences of depression, over two weeks, the intervention boosted individuals' completion of a self-selected goal from 46 to 60%.

8 The imposter phenomenon as a psychological barrier to female academic careers

Presenter: Marlene Kollmayer

Despite ongoing interventions aimed at increasing women's participation and persistence in academia, there remains a significant gender gap in high-level university positions. To effectively decrease this gap, understanding the underlying mechanisms that influence women's career ambitions is crucial. Research from both Europe and the U.S. indicates that women who experience the Imposter Phenomenon—an internal feeling of intellectual and professional inadequacy that persists despite related successes—may be more susceptible to falling through the academic “leaky pipeline.”. The Imposter Phenomenon has been shown to be particularly salient to women in university contexts, and in STEM fields that are socially stereotyped as requiring brilliance. The present study examines the Imposter Phenomenon as a mechanism in stereotype development and consequences in more than 500 researchers at different career phases across disciplines at the University of Vienna.

9 Predicting cross-national sex differences in educational achievement: Evidence from PIRLS and TIMSS

Presenter: Sandra Oberleiter

Over the past century, sex differences in educational achievement have been extensively studied and possible causes have been controversially discussed. It has been speculated that differing prosperity and equality of opportunities may be linked to these differences, but cross-national and longitudinal investigations are currently lacking. We present evidence for sex differences in international large-scale assessments of reading literacy, mathematics, and science across 16 cohorts from 1995 to 2019. Our analyses of PIRLS- and TIMSS-based reading literacy, mathematics, and science achievement data ($N = 3,900,000+$; 90 countries) showed advantages for girls in reading literacy (d range: -0.02 to 0.66). For mathematics and science, the pattern was less unambiguous, yielding non-trivial effects in both directions (d ranges: -0.44 to 0.36 and -0.50 to 0.46, respectively), although boys showed on average higher scores than girls in mathematics. Sex differences in all three domains were more pronounced in more egalitarian countries, yielding strongest effects for mathematics (β range 0.21 to 0.26). Higher national prosperity predicted larger sex differences favoring boys in mathematics (β range: -0.31 to -0.21) and science (β range: -0.26 to -0.13) as well as smaller sex differences in reading literacy favoring girls (β range: -0.21 to -0.12). In all, our findings suggest that economic macro-indicators predict sex differences in educational achievement but become less meaningful with increasing student ages.

Health Behaviors, Mental & Physical Health

10 Food is all around: How contexts create misbeliefs about the health-taste relationship

Presenter: Sonja Kunz

We investigate a novel cognitive-ecological account for misbeliefs about the relationship between food healthiness and tastiness. We propose that different frequencies of healthy and tasty foods in contrasting contexts can trigger perceptions that health and taste are related which diverge from the actual health-taste correlation in the presented food. We conducted three studies ($N = 369$), including a taste test, with adult Prolific academic participants from the UK and undergraduate psychology students from Austria. We found that different frequencies of healthy and tasty food across contrasting contexts can trigger misbeliefs about the relationship between health and taste. Our findings demonstrate that properties of the food ecology combined with basic cognitive processes can help explain the formation of food beliefs like the belief that unhealthy food tastes better than healthy food. Our study extends the existing explanations for food beliefs and provides a perspective on how they can be changed.

11 Hedonic Sampling of Foods: The Persistence of Food Beliefs in Reward-Rich Environments

Presenter: Niklas Pivecka

The unhealthy=tasty belief persists in many societies despite the availability of healthy yet tasty food alternatives. In three online experiments (*total N = 844*), we show that unhealthy=tasty beliefs persist in reward-rich environments with predominantly tasty food options. In all experiments, consumers made twenty choices between a healthy and an unhealthy option, but sampled from environments with either high or low chances of tasty meals. The sampling task was preceded by a learning phase in which consumers learned to associate the healthy or unhealthy food option with a positive taste feedback. Importantly, the chance of receiving a positive taste feedback in the sampling task was the same for the healthy or unhealthy food option (Study 1 and 3) or even lower for the food option that was tastier in the learning phase (Study 2). Consumers' choices followed initial beliefs more strongly in reward-rich environments, and initial beliefs persisted after the sampling task in reward-rich environments, but were updated in reward-poor environments. Our findings suggest that a basic hedonic sampling mechanism contributes to the persistence of food beliefs.

12 An inquiry into the "overexcitable genius" controversy in an international high-IQ cohort

Presenter: Jonathan Fries

Intelligence is well-known to predict health and longevity, with higher intelligence being associated with more favorable health outcomes and longer lifespans. However, recent evidence suggests that the proposed linear relationship might not extend to the upmost end of the intelligence spectrum, indicating that intellectually gifted individuals exhibit elevated rates in a specific set of physical and mental health conditions, so-called overexcitabilities. Presently, there are only few targeted investigations of this research question and none outside the US. Our objective was to replicate and extend previous accounts to a large number of novel overexcitabilities in a European high-IQ sample. The current study is a preregistered survey among members of MENSAs, an international society of individuals scoring in the highest two percent of the intelligence distribution. In all, 615 (307 female) members of the chapters from Austria, Germany, Hungary, Switzerland, and the United Kingdom participated. Compared to reference populations, we found considerably elevated rates of several conditions, such as autism spectrum disorders (risk ratio = 2.25), chronic fatigue syndrome (RR = 5.69), depression (RR = 4.38), generalized anxiety (RR = 3.82), or irritable bowel syndrome (RR = 3.76). Previously reported conditions such as asthma, allergies, or autoimmune diseases were unaffected. We demonstrate that gifted individuals face specific physical and – more pronouncedly – mental health challenges compared to the general population. The mechanism underlying this phenomenon currently remains speculative, because we presently found only little evidence for the previously favored immunological explanation.

13 Psychosocial Interventions and Survival Time in Cancer Patients: A State-of-the-Art Meta-Analysis and Multiverse Meta-Analysis of Randomized Controlled Trials

Presenter: Kenji Asakawa Haas

Background: The question of whether psychosocial interventions are able to prolong the survival of cancer patients has been studied for more than four decades. However, extant randomized controlled trials (RCTs) and prior related meta-analyses have arrived at contradictory conclusions. This meta-analysis and multiverse meta-analysis represents the most comprehensive attempt so far to synthesize all the available evidence. Methods: Databases Web of Science, Scopus, MEDLINE, PsycINFO, and Google Scholar were searched for eligible RCTs until May 2023. We estimated the overall effect using a random-effects model and investigated possible effects of important risk of bias factors (study quality, meta-analytic post-hoc power, and risk of sponsorship bias), of 24 substantive (e.g., cancer type, tumor stage) and methodological moderators (e.g., intervention type, analysis type), as well as of reporting biases (publication bias and p-hacking). Findings: The positive overall effect hazard ratio (HR) of psychosocial interventions on the survival of cancer patients ($k = 33$) was 0.78, 95% CI [0.69, 0.88], $p < .001$. Heterogeneity was substantial, with $I^2 = 50.24\%$ and a 95% prediction interval of HR [0.47, 1.29] in which new study effects could fall. The overall median survival difference ($k = 17$) benefitting treated patients was 3.8 months, 95% CI [-0.5, 8.1], $p = .082$. Preliminary multiverse meta-analysis suggests that the use of different effect-size measures and the application of diverse selection criteria appear to be responsible for the contradictory outcomes of prior meta-analyses. Conclusions: Psychosocial interventions seem to enhance cancer survival and a widespread application is therefore encouraged.

14 A pilot randomised controlled trial investigating the feasibility of a digital mindfulness-based intervention and its effects on psychological distress and stress in COPD patients

Presenter: Hannah Tschenett

Mindfulness-based interventions (MBIs) are effective in reducing psychological distress and stress in various chronic conditions. However, research on MBIs in individuals with chronic obstructive pulmonary disease (COPD), who often experience psychological distress and stress, is still scarce. Given the physical limitations of COPD patients, digital interventions are particularly promising. Therefore, this pilot study investigates a) the feasibility of a brief digital MBI and b) its effects on psychological distress and stress in COPD patients. Methods: $N = 38$ psychologically distressed COPD patients (62.74 ± 6.98 years, 61.5% female) were recruited and randomly assigned to the MBI or waitlist control group. Patients in the intervention group performed one of 4 auditory-guided mindfulness exercises (10-15min, via smartphone) daily for 8 weeks. Psychological distress, stress, and secondary outcomes (e.g., fatigue) were measured in both groups at baseline, after 4 and 8 weeks. MBI's feasibility was assessed via dropouts, usage rates and qualitative interviews with patients in the intervention group. Results: 21.05% patients dropped

out (final sample: n = 30). Preliminary data (n = 12) show a usage rate of 80.80% and positive experiences with the MBI (e.g., 92% rate MBI as pleasant in the interview). The final results on feasibility and effects on psychological distress and stress will be presented at the poster session. Discussion: This is the first study to investigate a brief digital MBI for COPD patients. The results may serve as a basis for larger clinical trials and promote the implementation of MBIs as add-on low-threshold treatment options in everyday life.

15 The role of the family for youth psychiatric readmission - A Scoping Review

Presenter: Amos Friedrich

Repeated admissions of children and adolescents after inpatient treatment point to underrecognized issues in the post-discharge period. For youth inpatients, the post-discharge family environment appears crucial to their recovery. However, recent reviews on predictors of psychiatric readmission in children and adolescents were unable to synthesize most family-level factors systematically due to the high heterogeneity between studies. Hence, this PRISMA-ScR conform scoping review aims to focus on family-related constructs, collating literature on the role of family-related structural and process variables for youth psychiatric inpatient readmission and identifying conceptual and methodological gaps in the current literature to derive directions for future research. This review may serve as an important guidance for future research devoted to understanding risk and protective factors within families of children and adolescents returning from inpatient psychiatric care.

16 Science Communication Project: Support for Teachers in Dealing with Mental Health Problems in Students

Presenter: Flora Seemann

In a joint master thesis project, an information booklet for teachers on mental health and mental illness in students was written. This booklet was designed to improve teachers' self-efficacy and mental health literacy with regards to the mental health and illness of their students. The improvement of these two constructs was evaluated in a one-group pretest-posttest design study, using student teachers in their masters studies as participants. They received a questionnaire on the two constructs before receiving the information booklet to read in the following two weeks. Afterwards, they completed the questionnaires again. Statistical analyses showed significant improvements in most aspects of the conducted constructs.

Self-Regulation & Decision-Making

17 Hold on, do I really need this? The effect of short reflections on young consumers' purchase desire and likelihood

Presenter: Maja Grünzner

Fast fashion, a main contributor to pollution worldwide, plays an increasingly important role in the fashion industry. Young fashion consumers are a demographic with great spending power in the fast fashion market and their purchases are often based on impulse. Hence, we want to explore if short interventions interrupting the impulse can decrease their purchase desire and purchase likelihood. Previous studies in the US have shown that short reflections can decrease buying urge in young consumers and a study with students from South Korea showed that a short postponement in comparison to other interventions has no significant influence on the buying process. We want to follow up on these results and prime participants' shopping desire with a vignette about an impulsive shopping scenario. Participants will be randomly allocated to one of three short reflection exercises or to a control condition with no exercise in a between-subject-design. The participants purchase desire and purchase likelihood will be measured after the intervention. The responses of young fashion consumers from the UK were collected via Prolific. With our study we wanted to extend the research on short reflections used as interventions and we specifically aim to test the effectiveness of different short reflection strategies. Results which are informative for the further development of behavioural interventions targeting fashion consumption.

18 Sustained self-control: Boundary conditions of engagement and active disengagement through a mental effort lens

Presenter: Leopold Roth

Sustained self-control plays a crucial role in goal achievement. However, research has illustrated the inability of current theorization to accurately predict self-control failure. Utilizing a novel design that progressively increased difficulty across time, two studies allowed us closer insights into the interplay of boundary conditions relevant to self-control engagement. Testing the role of incentives and task difficulty on performance in an online experiment (Study 1; N = 151), a significant non-linear interaction illustrated a hypothesized sweet spot of engagement differences between participants, depending on the incentive magnitude. Study 2 (N = 121) experimentally manipulated participants' fatigue before the self-control task while mirroring Study one's manipulations for incentives and difficulty. Furthermore, cardiovascular (CV) indicators of mental effort were recorded to illustrate the mechanistic role it plays in the phenomenon. Results again indicated a non-linear interaction consistent with a hypothesized sweet spot of engagement depending on the three-way interaction of incentive, fatigue, and difficulty for both performance and effort-related CV response. These findings are the first to sketch out the precise patterns of effort in sustained self-control, allowing for fine-grained observation of physiological disengagement in self-control tasks.

19 The Role of Inter-individual Differences in Executive Functioning when Predicting Real-World Self-Control Failures

Presenter: Georgia Clay

Executive functions (EFs) are assumed to play an essential role in determining self-control behavior. However, the effect size of the correlation between laboratory EF tasks and self-report measures of real-life self-control is typically small. Action control theory proposes individual differences in the tendency for efficient mobilization of control processes to be facilitated or impeded, and this has been proposed as a potential moderator between EFs and real-life self-control behavior. The current study (N = 396) tests this link through a repeated-measured online design carried out during the outbreak of the COVID-19 pandemic. We repeatedly assessed EF via the Stroop task and self-reported adherence to nine regulations introduced to inhibit the spread of COVID-19. We found that an individual's action versus state orientation moderated the relationship between Stroop task performance and regulation adherence, with a stronger correlation present in high action-orientation individuals than high state-orientation individuals. This supports the idea that having the capacity for control is not enough to perform well in real-life self-control situations. One must also be able to mobilize this capacity when a self-control conflict arises. Moreover, the study highlights the importance of accounting for inter-individual differences in the mobilization of control processes when relying on EF tasks to make inferences about daily self-control abilities.

20 Reward reduces now-bias but not self-bias

Presenter: Andi Cai

We report general perceptual biases (faster and more accurate information processing) toward stimuli associated with the labels “now” (now-bias) and “me” (me-bias) over the stimuli associated with “future” and “others”. Three studies were conducted with undergraduate psychology students from Austria where either chocolate was given as performance reward or no performance reward was given at all. The now-bias was found to disappear when participants' performance was boosted by reward but the me-bias persisted. These findings indicate that rewards might be potential options to reduce now-biases in real life (i.e., health or environmental choices), whereas social decisions would require different incentives.

21 Flipping the Switch in Attentional Control: Proactive Suppression and Capture Flexibly Guide Visual Attention Based on Search Goals

Presenter: Marlene Forstinger

While visually searching for different targets across time, visual attention is assumed to be guided by flexible working memory representations storing the features necessary to identify the target among irrelevant distractors. The present study tested whether working memory representations facilitate attentional guidance to target features or can be used flexibly to trigger facilitation or suppression depending on current task demands. We instructed participants to either search for a target by a task-relevant positive (e.g., blue or red) or a negative feature (e.g., not red), and

search tasks (positive vs. negative) alternated or repeated randomly from trial to trial. Prior to each target, we presented a spatial singleton cue with positive, negative, or irrelevant features. We measured search times depending on whether the singleton cue was presented at the same (valid condition) versus a different position (invalid condition) than the target. When participants searched for the target by a negative feature, search was slower in valid than invalid conditions with negative color and nonmatching cues, indicating that both singleton-cue features were similarly and proactively suppressed. In contrast, when participants used a positive color as a search criterion, search was faster in valid than invalid conditions with positive color cues, indicating attentional guidance toward the cue. Our results suggest that working memory representations for positive and negative features flexibly guide attention through guidance or suppression based on currently pertaining instructions but operate at different levels of feature selectivity.

Emotional Experience, Stress & Well-Being

22 Boredom and Performance - A Multilevel Meta-Analysis

Presenter: Lisa Stempfer

Empirical evidence on the undesirable impact of boredom on academic performance is rapidly growing. This stands in contrast to a scarcity of research syntheses, and their rather limited set of outcomes chosen for analyses (e.g., school grades). To synthesize findings more comprehensively, a new approach to conceptualize academic performance, by including cognitive, motivational, and behavioral factors, dispositions and results, is translated into a model on boredom and performance, and tested within a large-scale meta-analysis. Preliminary results ($N=1083$ effect sizes) show a significant overall effect ($r=-.230$, $p<.001$) for boredom and performance across all five performance categories. Heterogeneity in effect sizes could be explained by performance categories ($F(4, 1083) = 9.2842$, $p<.0001$), which supports the proposed model on boredom and performance.

23 Student learning at secondary schools in disadvantaged areas - Associations between perceived learning context, student motivation, positive emotions, and active learning behavior

Presenter: Sina Ludwig

Classroom climate plays an important role in students' motivational processes and their learning behavior in class. International studies have shown that, especially in schools in disadvantaged areas, factors such as a good relationship between teacher and student, low classroom disruption, and a positive social climate offer a way to counter unequal educational opportunities for socially disadvantaged students. In Austria, where the upward mobility in education is still remarkably weak, supporting schools in disadvantaged areas is therefore of great importance. The aim of this study is to identify the relationships between classroom climate, intrinsic learning motivation and positive emotions, as well as active learning behavior of students

from schools in disadvantaged areas. Based on the assumptions of Self-Determination Theory, a positive relationship between students' social relatedness in the classroom (i.e., social climate) and their active learning behavior (in terms of cognitive activation and persistence) is expected, mediated by students' intrinsic learning motivation and positive emotions. Data of N = 9184 students from 100 Austrian primary and secondary schools were collected as part of the research project "100 Schools – 1000 Opportunities" via online questionnaire. Only the data of the secondary school students (N = 5977) will be used in the upcoming analysis. It is planned to analyze the structural equation model using Mplus.

24 Stress im Alltag: Ein konzeptuelles Modell und eine Forschungsagenda

Presenter: Aljoscha Dreisörner

Stress ist ein allgegenwärtiges, multi-dimensionales Phänomen, das unser aller Leben durchdringt. Die Forschung der vergangenen Jahrzehnte hat versucht, die psychologischen und biologischen Mechanismen zu verstehen, die einer adaptiven bzw. maladaptiven Stressantwort zugrunde liegen. Die Mehrheit der Studien wurde dabei zur Erforschung der Mechanismen von Stress unter kontrollierten Laborbedingungen durchgeführt. Ein anderer Teil hat sich mit Stress am Arbeitsplatz beschäftigt. Nun findet Stress jedoch in der realen Welt nicht nur am Arbeitsplatz statt, sondern im Prinzip überall (z. B. in der Familie, im Verkehr oder bei Hobbies). Neuere konzeptuelle und methodische Entwicklungen wie Ecological Momentary Assessment (EMA) erlauben es, Stress im Alltag zu untersuchen. In diesen Beitrag geht es um die Entwicklung eines konzeptuellen Arbeitsmodells zu Alltagsstress. Aus dem Modell abgeleitet sollen folgende Fragen behandelt werden: 1) Was sind die optimalen Methoden und Maße, die eine adäquate Messung von Alltagsstress erlauben? 2) Wie können klar umrissene psychologische und biologische Mechanismen sowohl unter kontrollierten Laborbedingungen als auch in einem ökologisch validen Setting untersucht werden? 3) Gibt es spezifische Eigenschaften eines Stimulus/einer Situation, die eine spezifische Stressantwort begünstigen? 4) Was sind mögliche positive Effekte von Alltagsstress? 5) Wie können die Einsichten von 1) bis 4) für die Prävention und Intervention von stressabhängigen Beschwerden genutzt werden? 6) Was sind Unterschiede und Gemeinsamkeiten von Alltagsstress bei Menschen und Tieren? 7) Was sind die optimalen Analysemethoden, um der Dynamik von Alltagsstress statistisch gerecht zu werden? In diesem Beitrag stellen wir neben dem konzeptuellen Modell eine Forschungsagenda vor, wie diese Fragen untersucht werden können.

25 Characteristics of Significant Life Events Across Adulthood

Presenter: Sonja Radjenovic

Significant life events interfere with everyday life and have an impact on our well-being. Based on the reasoning that developmental losses increase, and developmental gains decrease with age, we hypothesize that older compared to younger adults report significant life events that are less normative, have lower valence, and are less controllable. At the same time, older adults should be better at

copied than younger adults because of their life experience and better emotional regulation. Participants (N = 688, 18-90 years) reported about a significant life event in the past two years. As predicted, life events were perceived as less age-normative, less positive, and less controllable with increasing age. Concurrently, older adults were to some extent better able to cope with less positive and less controllable life events. This could be due to older adults adjusting their goals. However, the moderation results also suggest that adaptation has limits at older ages.

26 The Effect of Music on Stress Recovery

Presenter: Yichen Song

Objective: This study aimed to explore the effect of music on stress recovery after a laboratory stressor using both subjective measurements and physiological indices. **Methods:** One hundred and five healthy female participants underwent the Trier Social Stress Test before being randomly allocated to four groups: group 1 (n = 25) listened to researcher-selected relaxing music; group 2 (n = 27) listened to self-selected relaxing music; group 3 (n = 26) listened to the sound of rippling water; and group 4 (n = 27) remained in silence. During the recovery phase, Visual Analogue Scales (VAS) were used for subjective stress measurement, saliva samples were collected for cortisol and saliva alpha-amylase (sAA) analysis, and Movisens equipment was used to measure heart rate and skin conductance levels. **Results:** During recovery, the change of VAS scores was significantly different among groups ($F(3, 101) = 2.81, p = 0.04, \text{partial } \eta^2 = 0.08$) and post hoc revealed that the control group recovered slightly better than the sound of water group ($t(101) = 2.54, p = 0.08, d = 0.70$); the area under the curve with respect to ground of sAA was significantly different ($F(3, 101) = 2.70, p = 0.049, \text{partial } \eta^2 = 0.07$) and the researcher-selected group recovered slightly worse than the self-selected group ($t(101) = 2.56, p = 0.07, d = 0.71$); the recovery time of heart rate was significantly different among groups ($H(3) = 14.53, p < 0.01$) and the researcher-selected group recovered significantly faster than the sound of water group (difference = 28.78, critical difference = 22.51). No difference was found in the cortisol recovery and skin conductance recovery among the four groups. **Conclusion:** Despite empirical evidence of music being beneficial for stress reduction, music did not benefit stress recovery in the current study.

27 An Ecological Momentary Music Intervention for the Reduction of Stress in the Daily Life of Turkish Immigrant Women

Presenter: Stefanie Hirsch

Ethnic discrimination (ED) is associated with mental and physical health impairments. As a cause, a dysregulation of psychobiological stress systems can be assumed. Recognizing the need for adequate and well-timed interventions, this pilot study investigated the feasibility and the effectiveness of a music-based ecological momentary intervention aiming to reduce acute stress in the everyday lives of affected women. Using a smartphone-based app, Turkish immigrant women answered items regarding momentary subjective stress levels, perceived ED, mood, and further variables four times a day for 35 days. Additionally, they reported the occurrence of every discriminatory and/or stressful event. To examine biological

reactions, saliva samples were collected as part of every report. The intraindividual-randomized design allowed to determine the effects of music listening in moments of acute perceived ED and/or stress on psychological and biological stress parameters. Preliminary findings of $n = 13$ participants suggest that the intervention is feasible, as usage rates of the app were high (84.5% complete data entries) and self-reports by study participants ($M_{age} = 25.09$ years, $SD = 3.9$) were positive. Regarding the effectiveness of the intervention, subjective stress levels did not differ between intervention events (i.e., music listening) and control events (i.e., no music listening). However, subjective stress levels were significantly lower in the post intervention phase (week 5) than in the baseline phase (week 1). Findings of our pilot study provide valuable insights for the implementation of tailored ecological momentary interventions to reduce stress levels in everyday life.

28 Can Art Viewing in Virtual Reality Have a Positive Impact on Wellbeing? Examining the Effects of Immersive Three-Dimensional Art Experience on Mood, State-Anxiety and Subjective Wellbeing

Presenter: Aleksandra Orlova

Previous research has found that when viewed In-person, art may bring positive change in well-being and mental health (Fancourt & Finn, 2019). In particular, visiting museums and viewing artworks has been shown to positively influence subjective well-being, life satisfaction (Lee et al., 2021), reduce cortisol level (Clow et al., 2006) and blood pressure (Mastandrea et al., 2018). However, the technological development has provided new means of interacting with art, that can be especially useful in cases where access to museum is not available. Research done in the past few years has shown that digital art engagement may also bring benefits on mental health, reduce anxiety, loneliness (Trupp et al. 2022), decrease negative and increase positive emotions (Cotter et al. 2022). Nevertheless, previous research has mostly focused on exploring the effects of viewing art on two dimensional devices, such as smartphones or computers. However, the most immersive and close to real-life technology is Virtual Reality (VR). It was proven to elicit emotions similar to real life (Marín-Morales et al., 2019) and is already widely used clinical psychology (Rivas, 2022). The following study aims to explore whether art viewing experience in VR may lead to positive change in psychological well-being and if so, whether it is mediated by type of viewing and level of immersion.

29 Are there shared patterns in how we respond to art, and how can we characterise these varieties?

Presenter: Stephanie Miller

A constant argument throughout the history of humans' interactions with art is that we may have certain reactions that are both notable and perhaps unique. Standing in awe at a painting, gripped with thrill, anger, mesmerised by beauty, finding oneself transformed—these reactions stand as a constant basis for lasting interest in the arts from both the humanities and science. However, because of the wide range of factors in arts engagement, empirical investigations of the scope and range of experiences are scarce, leaving us without a firm understanding of what kinds of reactions we

might actually have, how these are explained at basic psychological levels, how they may relate to typically assessed evaluations (liking, interest, etc.), and how reactions might connect or even be shared across individuals and artworks. We present a new art-experience evaluation method and evidence from multiple projects quantifying and comparing ways of experiencing art. These involved a large sample of participants' ($N = 1000+$) recollections of their most profound art experiences, using qualitative reports and a scale-based list of cognitive-affective terms selected based on theoretical models of arts experiences (VIMAP, Pelowski et al., 2017). Different participants reported experiences with specific artworks in the museum. Although we assess responses to wide range of artworks, network modelling and latent class analyses of the felt experiences suggested a small variety of experience types, largely similar for both paradigms and aligning with the VIMAP model, suggesting a compelling basis for future research into contributing factors and underlying processing mechanisms.

30 Who Benefits from Art and How

Presenter: MacKenzie Trupp

When experienced in-person, engagement with art has been associated—in a growing body of evidence—with positive outcomes in wellbeing and mental health. Today, on the other hand, art viewing, cultural engagement, and even ‘trips’ to art museums can take place in several modalities via internet-enabled computers, smartphones, and even virtual reality. In a recent study (Trupp et al., 2021), our author team presented some of the first evidence that online art interventions, using an interactive art exhibition from Google Arts and Culture featuring waterlily paintings from Monet delivered through the internet, viewed in individuals’ homes, could lead to wellbeing impacts. In the present project, we replicated our past findings, confirming the potential for art online to be a tool to support wellbeing by improving levels of negative mood and anxiety, while providing stronger evidence through a more rigorous design and pre-registered analysis plan. Second, we find trait level aesthetic responsiveness to be a predictor of wellbeing effects, whereas those who are more responsive to art, poetry, and music can benefit more from this online art intervention. Lastly, this effect is mediated by subjective experiences factors; pleasure and meaningfulness. We further discuss the importance of the participants’ experience during art interventions and the differential influence of each subjective experience factor on each wellbeing outcome.

31 Effects of acute stress on entorhinal grid-like codes during virtual spatial navigation

Presenter: Thomas Karner

Navigating the physical environment relies on brain regions in the medial temporal lobe. More specifically, the entorhinal cortex is known to house grid cells that are a central component of spatial navigation. Stress can have detrimental effects on navigation and memory but whether this relies on a stress-related impairment of grid-like coding is currently unclear. Here, we asked whether acute stress affects spatial navigation, memory, and associated entorhinal grid-like codes. Human

participants underwent functional magnetic resonance imaging (fMRI) while navigating within a virtual-reality environment and retrieving object-location associations. After baseline measurements of spatial navigation performance and entorhinal grid-like coding, participants were either subjected to a stress induction or to a non-stressful intervention and repeated the task thereafter (stress and control groups, respectively; currently n = 20 each). Participants of the stress group were significantly more stressed, anxious, and unhappy. As expected, navigation was associated with increased activation in the posterior medial temporal lobe, retrosplenial, parietal and occipital regions, as well as with thalamic and striatal areas. First analyses showed that this results profile was partly affected by stress, showing decreased navigation-related activation in parietal regions and increased activation in occipital regions after stress (compared to the control group). Together, this suggests that acute stress modulates brain activity related to spatial navigation. Data collection and analyses are currently still ongoing and final results of the behavioral data and entorhinal grid-like coding will be presented at the poster session.

Sensory Processing

32 Rhythmic fluctuations in tactile attention

Presenter: Burcu Bayram

Background: Recent evidence suggests that human attentional capacities fluctuate rhythmically at a sub-second timescale, in parallel with oscillatory neural activity in the range of 4-12 Hz. So far, these behavioral rhythmic fluctuations have been demonstrated in the visual and auditory domains.

Aim: In the current study, we investigated a) whether somatosensory spatial attention performance likewise fluctuates rhythmically at a similar frequency, and b) whether performance fluctuations at two simultaneously monitored body locations are out of phase with each other, suggesting that somatosensory attention samples distinct body parts in alternation.

Methods: In a Posner-like spatial cuing paradigm, each trial contained a tactile uninformative cue and a subsequent target presented to either the left or right index finger. Participants reported the target location via a speeded button press. Crucially, we densely sampled performance at 75 possible cue-to-target intervals between 250 and 1000 ms and thus obtained a time series of hit-rates and reaction times reflecting ongoing fluctuations in attention.

Results: In line with our first hypothesis, spectral analysis of the performance time series revealed significant rhythmic performance fluctuations between 10 and 20 Hz (i.e., in the alpha/beta frequency range). However, we did not observe any phase relationship between fluctuations of congruent and incongruent trials.

Conclusion: Together with recent similar findings in the visual and auditory domains, our results suggest that rhythmic attentional sampling might be a key characteristic of sensory processing in general.

33 Respiratory and Cardiac Interoceptive Sensitivity in Infancy

Presenter: Markus Tünte

Several recent theoretical accounts have posited that interoception, the perception of internal bodily signals, plays a vital role in early human development. Yet, to date, only one published study has reported evidence of cardiac interoceptive sensitivity in 5-month-old infants (Maister et al., 2017), whereas others reported mixed evidence. Furthermore, existing evidence does not go beyond the perception of cardiac signals and focuses only on the age of 5 months, limiting the generalizability of the results. Here, we replicated the cardiac interoceptive sensitivity paradigm introduced by Maister et al. (2017) in 9- and 18-month-old infants using a longitudinal approach. Going beyond, we introduced a novel experimental paradigm, namely the iBREATHE, and provided the first evidence that infants show respiratory interoceptive sensitivity. Data revealed no relationship between cardiac and respiratory interoceptive sensitivity in 9-month-old infants, mirroring previous results in adults and children. Looking at potential age-related effects, we found exploratory evidence that respiratory, but not cardiac, interoceptive sensitivity scores increased from 9 to 18 months of age. By examining early cardiac and respiratory interoceptive processing, we provide compelling evidence that infants are sensitive to their interoceptive signals.

34 Investigating the temporal dynamics of top-down attention during single- versus dual-color search

Presenter: Rebecca Rosa Schmid

Lately, a number of psychophysical studies on human visual perception and attention demonstrated rhythmic fluctuations in the time course of behavioral performance from around 4 to 14 Hz, matching the timescale of ongoing oscillatory brain activity. Further, studies reported that the speed of these fluctuations decreases by half during the monitoring of two versus one attended locations or objects. Critically, attention is often top-down directed through templates of task-relevant features held in visual working memory (VWM). Sensory input is then compared to the templates until a match is achieved. Prior research showed that while holding two target features in VWM, discrimination performance exhibits a temporal profile of ~ 4 Hz per feature. However, it is unknown whether the simultaneous monitoring of two versus one feature templates during visual search leads to a similar rhythmic performance fluctuation. To elucidate this issue, we ran two dense-sampling experiments (i.e., we varied the template-to-target intervals densely across a broad range of such intervals) with a visual search task under single- and dual-color search conditions. With target colors changing on every trial, participants encoded either one or two colors and subsequently searched for the color-defined target among three distractors. By testing search performance based on VWM contents at 100 different time points after encoding, we estimated the time course of template-based performance separately for the single- and dual-color search conditions. Our findings provide novel insight into the temporal dynamics of VWM representations and contribute to the ongoing debate on whether search for more than one target feature occurs in parallel or switches rhythmically between features. Particularly, together

with previous work from our lab suggesting a cyclic re-activation of task-relevant features in VWM, results from the present study shed light on current beliefs regarding a simultaneous operation of multiple templates guiding search.

35 The Role of Interoception in Art Experience

Presenter: Corinna Kühnapfel

Interoception has been shown to play a role in the processing of emotional stimuli. However, this has yet to be studied with art, a domain where emotions are a key aspect of the experience. To fill this gap, in two studies, we investigate the role of interoceptive sensitivity in participants' (N=39) cognitive-affective responses (Liking and Being Moved) to 30 representational and 30 abstract artworks, whether the relationship between bodily reactions (SA and HR change) during artwork perception and cognitive-affective responses is moderated by interoceptive accuracy (measured via heartbeat detection task) (study 1), as well as the role of interoceptive sensitivity (measured via MAIA-2) in cognitive-affective responses to the same 60 artworks (study 2; N=222). Results show that neither interoceptive accuracy does not play a role in the coupling between bodily responses and art experience, and neither accuracy nor sensitivity play a role in art experience. Exploratory analyses of the MAIA-2 subscales revealed that listening to one's body to learn about one's emotional state (Body Listening), and awareness of the connection between body sensations and emotional states (Emotional Awareness), predicted emotional (Being Moved), but not cognitive (Liking) responses to art. Thus, awareness of the body and physiological sensibility might play a role in emotional responses to art, while one's abilities and strategies to regulate and accurately detect interoceptive changes might not. We discuss routes for the future to assess finer-graded dimensions of interoception to show how emotional access mediated by the body contributes to our experience of art.

36 Neural entrainment to gaze-cued visual rhythms in 6-month-olds

Presenter: Alicja Brzozowska

Adults' eye gaze direction guides infants in visually exploring their environment. In this study, we asked how adult gaze direction modulates infant attention to stimuli presented rhythmically in their visual periphery. Specifically, given the evidence that rhythmic visual stimulation can entrain functional brain rhythms, we were interested in whether eye gaze direction would differentially modulate entrainment to rhythms presented in infant theta EEG band (~3-5 Hz), implicated in learning, and alpha EEG band (~5-7 Hz), associated with attention inhibition. In the experiment, 6-month-olds are presented with a centrally positioned adult female face with direct gaze, with two objects flickering on the left and right side of the face at two different frequencies. The face then turns her gaze to one of the two objects. There are 3 main types of trials: theta, with both peripheral objects flickering within infant theta band (3.43 Hz & 4.5 Hz), alpha, with both objects flickering within infant alpha band (5.54 Hz & 6.55 Hz) and mixed, with one object flickering within infant theta (4.5 Hz) and the other infant alpha (6.55 Hz) frequency band. Infant steady state visually evoked potentials (SSVEPs) to visual flicker will be used as an index of neural entrainment. We hypothesize that across trial types, SSVEP signal-to-noise ratios (i.e., power at the

frequency of interest relative to the power at neighbouring frequencies), will be stronger to the frequencies of objects congruent vs. incongruent with the gaze direction. Moreover, we hypothesise that these effects will be more pronounced for the frequencies within infant theta as compared with the frequencies within infant alpha EEG frequency band, speaking for differential functionality of the two brain rhythms. We will present results of preliminary analyses.

37 Entrainment and its influence on looking behavior during two learning/attention tasks in infants

Presenter: Matteo Mattersberger & Johanna Ruelß

The aim of this project was to investigate whether the rhythms (“flickering rate”) of presented stimuli influences infants' looking behavior in two attention/learning tasks. To do this, we analyzed the looking behavior of 6-month-old infants during a gaze cue and a prediction task. In the first task, the gaze cued objects flickered in frequencies associated with either infants' alpha or theta brain oscillation. During our analysis we investigated whether infants showed a difference in gaze-following between alpha, theta and mixed trials. In the second task, the flickering rate of two stimuli (likewise associated with either infants' alpha or theta frequency range) predicted a subsequent “reward” stimulus. We analyzed whether there was a difference in the latencies to orient towards the reward depending on the frequency of the predictive stimuli.

38 Investigating visual attentional guidance with a modified spatial cueing paradigm

Presenter: Markus Grüner

Visual attention is the selective processing of relevant visual information among the enormous amount of information in our environment. In spatial visual attention, processing is facilitated at one location compared to other locations. This results in faster and more accurate responses to stimuli at the facilitated location during visual search tasks. Where attention is allocated is determined by pre-attentive processes that occur in parallel during early visual processing. We investigated which factors influence visual attentional guidance using a spatial cueing paradigm with multiple cue conditions. The cues appeared prior to the onset of a search display either at target (valid condition) or at nontarget location (invalid condition). Faster reaction times in valid conditions compared to invalid conditions indicate a spatial allocation of attention toward the cue (i.e., facilitated processing of the target when it appeared at the cue's location). Using cues with different features allowed us to investigate which features can pre-attentively guide visual attention depending on the current search goals of participants. In the first manuscript, we showed that the global outline or global orientation of simple 2D shapes can guide attention depending on the search task. In the second manuscript, we found no influence of previous target features (i.e., selection history) on attentional guidance during search for a new target feature. In the third manuscript, we investigated how salience influences attentional guidance during different search tasks. All three manuscripts show the strength of this modified spatial cueing paradigm for investigating attentional guidance.

39 How flexible is visual search? EEG evidence for search template switching

Presenter: Lea Bachmann

Successful visual search is guided by positive search templates for the target but also by negative search templates for known distractor features. Here we tested how flexibly both templates guide attention. We found that distractor suppression changes from an immediate, automatic process to a "search and destroy" strategy when switching between positive and negative search templates.

Cognitive Functioning

40 Entorhinal grid-like codes map visual space during memory formation

Presenter: Luise Philine Graichen

Eye movements, such as saccades, allow us to sample the visual world, which in turn shapes memory. Recent work in animals and humans has shown that saccades are related to the activity of spatial cells in the entorhinal cortex, including grid cells or associated grid-like codes. It is unclear however, whether grid-like codes are relevant to memory formation in humans. Here, we asked whether entorhinal grid-like codes are associated with saccades as human participants studied visually presented scene photographs. In two separate experiments ($N1 = 32$ and $N2 = 50$), participants viewed scene images while undergoing functional magnetic resonance imaging (fMRI) and continuous monitoring of eye gaze. To determine memory performance, participants of both experiments completed a recognition memory task immediately after study (experiments 1+2), as well as one week after (experiment 2). Results consistently revealed significant grid-like codes in the entorhinal cortex when participants produced saccades to study the scene images. Entorhinal grid-like codes positively scaled with activation in the frontal eye fields and inferior temporal cortex. Notably, we found that increased recognition memory performance was associated with lower entorhinal grid-like codes across participants. These results reinforce the notion that entorhinal grid-like codes contribute to oculomotor and visuo-spatial processing during human memory formation.

41 The altered mind: is increased synergistic information processing driving ketamine's anti-anhedonic properties?

Presenter: Maximilian Kathofer

At subanesthetic dose, ketamine induces altered states of consciousness and increases measures of complex brain dynamics. Typically, these measures rely on connectivity analyses using bivariate correlations failing to uncover higher-order – yet biologically more plausible – dependencies. Partial entropy decomposition enables the detection of these higher-order dependencies and disentangles the observed information into redundant and synergistic parts, of which the latter has been shown

to be specifically modulated by altered states of consciousness. The still poorly understood rapid antidepressant and anti-anhedonic action mechanism of ketamine might be linked to its modulation of precisely these higher-order dependencies, reflecting a breakup of engrained connections inducing acute alterations in the state of consciousness, and thus, facilitating a breakout of rigid behavioral patterns long-term. We investigate the link between alterations in the conscious experience and complex information processing. We use ketamine to alter the state of consciousness and music to manipulate the hedonic response in 30 neurotypical subjects and 25 patients with anhedonia – clinically defined as inability to feel pleasure. The full within-subject design consists of 4 sessions; baseline, two treatment sessions (ketamine and placebo) counterbalanced across subjects, and a follow-up session. Four hours after administration, to assess the subacute state in which beneficial effects start emerging, participants complete several standardized assessment scales (e.g., 5-Dimensional Altered States of Consciousness and Dimensional Anhedonia Rating Scale) as well as a resting-state scan and aesthetic task using fMRI. The aesthetic task consists of self-selected highly moving and neutral music to examine ketamine's effect on the hedonic tone. Participants rate the induced experiences based on 3 dimensions: aesthetically moving, aesthetic chills, and valence. Here, we present a preliminary data-set for the neurotypical subjects only, evaluating whether ketamine increases synergistic information processing. We probe whether altered synergistic information processing is associated with ketamine's modulation of the hedonic experience and what role altered states of consciousness play in this relationship implementing LME models with additional factors of Hedonic Experience and Altered States. Preliminary data shows that ketamine increases the hedonic experience. Further findings will shed light on the role of the altered mind and synergistic information.

42 Rasch-Conformity of the Simple Squares Test: Evidence from Austrian Military Conscript Data

Presenter: Patrick Melichar

A comprehensive assessment of aptitude has become an integral part of the military conscription procedure. The literature emphasizes the importance of assessing an individual's intelligence due to the predictive power of general cognitive ability (GCA) in relation to their future performance in military tasks. During the aptitude assessment conducted by the Austrian Armed Forces, a nonverbal matrix-reasoning task called the Simple Squares Test (SST) is employed to measure the general cognitive ability (GCA) of conscripts across Austria. In the future, the implementation of an adaptive administration of this test is planned. To achieve this goal, the availability of a pool of Rasch-homogeneous items is a necessary precondition. For this purpose, 25 items of the SST were administered to a sample of $N = 4138$ male conscripts as part of their aptitude assessment during conscription. The full dataset was then split at random into a discovery and replication subsample. First, Rasch-homogeneity was established in the discovery subsample ($N = 1058$) by iteratively removing items that showed unsatisfactory model fit according to the Wald-statistic. Subsequently, Rasch-validity of the homogeneous items was reassessed in the replication subsample ($N = 3080$), which failed to result in a Rasch-conforming item

pool as evidenced by the Likelihood ratio tests. In all, our findings indicate that the SST is unsuitable as a basis for an adaptive aptitude assessment.

43 Is there a Flynn effect for attention? Cross-temporal meta-analytical evidence for attentional stability but decreasing processing speed

Presenter: Denise Andrezejewski

Over the past century cross-temporal changes in average IQ test performance have been observed (Flynn, 1984, 1987); a phenomenon that has been termed The Flynn Effect. While these changes have been predominantly positive during the majority of the twentieth century, with average IQ gains of three points per decade, trends towards stagnation and reversal have been observed. The heterogeneity of these findings could possibly stem from an unobserved domain-specificity and therefore evidence from other cognitive ability related domains is needed. The present cross-temporal meta-analysis provides the first account about changes attention over a period of 32 years. We used the d2 Test of Attention (Brickenkamp, 1962), a well-established, validated, and widely used measure, to investigate cross-temporal changes in selective attention and processing speed. Overall, we were able to retrieve data from 287 independent samples (N = 21,291) from 179 studies over a time span of 32 years (1990 – 2022). The study used a Cross-Temporal Meta-Analysis (CTMA) to examine d2 Test mean score changes over time. Overall, our findings suggest that selective attention has not significantly changed over the past 30 years, but there seems to be however a progressive decline in processing speed. Potential reasons for (i) the absence of a Flynn effect of attention and (ii) for the decreasing processing speed are discussed.

44 Religiosity does not prevent cognitive declines: Cross-sectional and longitudinal evidence from SHARE-DATA

Presenter: Florian Dürlinger

Over the past hundred years, a plethora of studies on intelligence and religiosity associations predominantly yielded evidence for a meaningful negative relation between these two variables. However, effect strengths varied substantially between primary studies and it has been suggested that religiosity and intelligence associations change as people age, because religiosity may play a protective role for cognitive abilities in elderly individuals. Consequently, it has been suggested that negative intelligence and religiosity associations may decline in strength or even reverse signs as people age. Therefore, we examine cross-sectional associations of self-reported religious behaviors and cognitive function (memory, numeracy, verbal fluency, and a proxy of psychometric g) as well as their cross-temporal changes in respondents from 11 European countries and Israel aged 50+ years (N = 30,424) in three waves of the Survey of Health, Ageing, and Retirement in Europe (SHARE). As expected, cognitive function scores were meaningfully negatively related to praying whilst associations with participation in religious services were trivial. Multilevel random-intercept regressions showed no age-related variations of memory, numeracy, verbal fluency, or g with self-reported beliefs. Cross-lagged panel analyses indicated larger directional effects of religiosity on intelligence than vice versa.

Examination of macro level data indicated slower cognitive declines in countries with higher societal religiosity values. Our evidence shows a negative, non-trivial association between intelligence and religiosity in elderly samples which remains robust across increasing participant ages. Results suggest reversing causal pathways concerning intelligence and religiosity associations for different stages of life. While intelligence affects religiosity at an early age, religiosity might have an impact on intelligence at an older age, whereby the negative association persists. The intelligence religiosity association is moderated by the importance of religiosity within countries thus indicating positive effects of religiosity on a healthy cognitive aging in corresponding environments.

45 Interdependency of Couples' Everyday Cognitive Functioning

Presenter: Fiona Rupprecht

Previous research indicates that older spouses show similar level of cognitive functioning. Such associations likely stem from initial as well as increasing similarities in cognition due to shared aspects of everyday life and interdependencies. In our project, we chose midlife as a crucial period for later cognitive decline and investigated 137 opposite-sex couples' cognitive functioning in daily life. Participants were aged 40 to 70 years and the majority were in long-term romantic relationships. Over 8 days and for up to three semi-random measurement times a day, participants completed a symbol search task to measure processing speed and a dot memory task to measure visual memory via a smartphone-app. Results indicate moderate interdependencies in couples' everyday processing speed, which clearly speak for both reciprocal influence between spouses and shared everyday influences. For (visual) memory, results indicate a weak association of mean levels between spouses and everyday partner effects only for the oldest couples. These results provide first insights into how similarities in cognitive functioning may arise in couples' everyday life. They also support findings from macro-longitudinal research speaking for similarities in processing speed, but more complex patterns of mutual compensation in memory.

Interpersonal Aspects in Education, Development & Perception

46 Just staring versus transformational experience? – Investigating the role of art context in performance art with Marina Abramovic's "The Artist is Present"

Presenter: Theresa Demmer

"It's plain to me that this is something incredible. . . I did almost nothing, but they take this religious experience from it" (Abramovic, 2010). Marina Abramovic's performance "The Artist is Present" attracted over 850,000 people to its exhibition. Many stood in line for hours to sit opposite the artist and look into her eyes, in silence, and with many anecdotally reporting profound emotional, even "religious" or transformative experiences. But, what had happened during this performance? Were

the strong emotions the result of an aesthetic, or just an intensely social, experience? Art and performance are both said to be transformative. Recent research also suggests transformative power in eye-to-eye contact. In order to better understand the processes behind participants' experience, but also the experience of performance art and transformative aesthetic experience in general, as well as the role of art context, this study replicated and adapted "The Artist is Present" in an art and in a non-art condition. Participants' experience was measured in pre-post questionnaires, given two weeks before, right before, and right after the encounter. Brain activity, measured with fNIRS in areas connected to art processing and empathy in both viewer and artist during the performance, aimed to connect behavioral findings with underlying neural correlates and to illuminate the role neural synchrony might play in transformative experiences. We discuss key differences in participants' results, especially in the art context, and the role of this medium in delivering profound emotional experiences.

47 Laughing Together – the influence of laughter on interpersonal synchrony, bonding and prosociality

Presenter: Verena Schäfer

The present study investigated the mechanisms of laughter in the context of neural and behavioural synchrony and its effects on bonding and prosocial intentions towards an interaction partner. Laughter is a rhythmic, audiovisual expression of emotion, often occurring during social interactions, and has been shown to increase bonding in a social group through endorphin release. Being a multimodal, rhythmic social stimulus, laughter could be hypothesized to facilitate interpersonal synchrony. This, in turn, could contribute to increased bonding and prosociality between interaction partners. The present study aimed at testing these hypotheses using behavioural and neural data from a free interaction task. To this purpose, pairs of same-gendered strangers were assigned to a laughter or a control condition. First, depending on condition, participants had to play a funny (or neutral) interactive game, and watch funny (or neutral) animal videos. After that, they were left alone for 10 minutes of free interaction, in which interpersonal behavioural synchrony was measured. Finally, participants completed questionnaires about rapport, liking and prosocial intentions towards the interaction partner. The Bayesian sequential testing approach with a Bayes factor of 1/5 or 5 is used to determine the sample size. Behavioural data will be analysed with the software OpenPose and Bayesian hypotheses testing. The results provide new information on the influence of laughter on neural synchrony, bonding and prosociality.

48 Opioidergic Modulation of Pain Empathy and Prosocial Behavior

Presenter: Julia Braunstein

This study aims to investigate the 'shared representations' account on empathy. We will crucially extend previous insights by applying double-blind morphine administration and testing whether dampening participant's own pain experience would impact pain empathy as well as prosocial motivation to exert physical effort to help someone else avoid pain.

49 Active parental mediation relates to use of digital devices by children in ways which promote individual development

Presenter: Teresa Koch

Parental mediation styles impact children's capabilities and attitudes to use digital technology in ways that support individual development and integration in society, which is seen as digitally mature use. A cross-sectional study supports that active parental mediation links to higher digital maturity and lower likelihood of digital addiction. Many parents worry about fostering their children's use of digital devices in ways that promote, not hinder, individual development. The present study tested if parental mediation styles impact children's digitally mature use of devices. In a survey, parents reported parental mediation styles regarding digital devices. Their children (aged 12-18) answered items on digital maturity (capabilities and attitudes in using digital technology), daily use hours of devices and digital addiction. Results showed that with higher active mediation, digital maturity increased, addiction and reported use hours decreased. The relation of active mediation with addiction was fully mediated by digital maturity. The study suggests that active parental mediation can help to develop digital maturity and use digital technology beneficially.

50 Shedding light on relations between teacher emotions, instructional behavior, and student school well-being – evidence from disadvantaged schools

Presenter: Julia Holzer

This study investigates associations between teacher emotions (i.e., joy, anger, anxiety), teacher-reports of instructional behavior (i.e., cognitive and motivational stimulation, classroom management, and social support), and students' reported school well-being (i.e., positive emotions and intrinsic motivation as experienced at school). Data were collected from 1550 primary school students and their 134 homeroom teachers from 50 Austrian disadvantaged schools using online questionnaires. Multilevel mediation analyses revealed positive relations of teachers' joy with aspects of all assessed dimensions of instructional quality, while anger and anxiety related negatively only to aspects of classroom management. No associations were identified between teachers' emotions and instructional behavior, or teachers' joy or anxiety and student school well-being. Surprisingly, teacher anger positively related to student intrinsic motivation, representing a valence-incongruent link which evokes interesting perspectives and stimulates a further differentiation of established theoretical assumptions.

51 How differential guidance of attention shapes infants' visual cortical processing

Presenter: Anna Bánki

In the first year of life, infants show significant development in their ability to selectively attend to objects in the environment. Social interactions influence infants' attention: When looking at novel objects, infants' neural responses increase following joint attention with an adult (Hoehl et al., 2014). However, it is not yet established

how social interactions shape visual processing already in infancy. Our study assessed if differential attention guidance can shift infants' visual attention to object versus background of a visual scene. Visual processing of object versus background could be assessed in children's electroencephalogram by using a frequency tagging approach (Köster et al., 2017). This is, presenting object and background at different driving frequencies elicits separate evoked responses for each element. In the current electroencephalography (EEG) study, 11- to 12-month-old infants (n = 53) watched flickering natural images with an object in front of a background, flickered at different driving frequencies (5.67 and 8.5 Hz, counterbalanced) while infants' visual cortical processing was recorded with EEG. We applied a between-group, pre-post design with a training phase in between: In the pre- and post-phases, infants observed the scenes. During training, an experimenter guided infants' attention by consistently pointing to either the object or the background on the scene (according to the group). In this poster presentation, we will present preliminary EEG results on the effect of differential attention guidance on infants' visual cortical processing during live social interactions.

52 Spare me your compliments! The role of fear of positive evaluation and emotion regulation in adolescents' social anxiety

Presenter: Achilleas Tsarpalis Fragkoulidis

Recently, fear of positive evaluation has emerged as a key aspects of social anxiety, alongside fear of negative evaluation. Fears of evaluation intensify during adolescence, a time when individuals are expected to navigate new, emotionally challenging situations. This study examines the associations between social anxiety, fear of positive and negative evaluation, and three emotion regulation strategies relevant to social anxiety, i.e., suppression, acceptance, and rumination. Data were collected from 647 adolescents via an online survey and analyzed using structural equation modeling. We found that fear of negative evaluation was significantly related to rumination, whereas fear of positive evaluation was significantly and negatively related to acceptance. We further found an indirect effect of social anxiety on suppression via fear of positive evaluation and acceptance in a serial mediation and an indirect effect of social anxiety on rumination via fear of negative evaluation. Not only do fears of positive and negative evaluation appear to be distinct constructs, but they are also differentially associated with three emotion regulation strategies pertinent to social anxiety. Fear of evaluation and its associations with emotion regulation deficits might hinder the therapeutic process by acting as a deterrent to positive reinforcement or potentially impeding the development of a successful therapeutic alliance.

53 Neural correlates of action observation in the dog and human brain

Presenter: Magdalena Boch

Observing the actions of others provides a wealth of social information and social learning. Research in humans and non-human primates has revealed a distributed brain network involved in action observation and species differences regarding temporal lobe involvement. These differences have been linked to tool-use behaviour

and the ability to imitate the actions of others. Although domestic dogs are not tool users, they have advanced imitation skills and a temporal lobe that evolved in carnivorans independently of primates. We investigated whether dogs possess an action observation network functionally analogous to humans and how this network is engaged in the two species when they perceive each other's actions. While undergoing functional MRI, N = 28 dogs and N = 40 humans saw videos of transitive (i.e., picking up a ball) and intransitive (ball edited out) actions performed by dogs or humans and two control videos. Based on preliminary results, compared to the control conditions, action observation resulted in greater temporal lobe activation. We observed parietal lobe and premotor activation in humans. In dogs, we found greater activation for intransitive compared to transitive actions in the somato-sensory cortex. In humans, transitive actions lead to greater activation in the inferior temporal cortex. Observing conspecific compared to heterospecific actions led to increased activation in agent-sensitive regions in the dog temporal lobe and the human primary visual cortex. The human action observation network responded stronger to heterospecific than conspecific actions. Our study showed a partly functionally analogous action observation network in both species. Differences in frontoparietal lobe involvement likely reflect the species' divergent skills in object-manipulation. Analogous to humans, observing transitive and intransitive actions elicited activation in dogs' temporal lobe. This is first evidence of a link between temporal lobe engagement and the ability to imitate in a non-primate species. Our study provides novel insights into the neural bases of social behaviour and learning.

54 Modulation of the Action Observation Network – Investigating Action, Agent and Observer Factors in an fMRI Study

Presenter: Olaf Borghi

The action observation network (AON) is a system of brain areas that are active during the observation and execution of actions. Despite extensive research on its role for social cognition, little is known on how the AON is modulated by different factors, especially in relation to the observation of actions performed by non-human animals. In the present study, for the first-time using fMRI data, we investigated the differential activation of the AON in dog experts and non-experts (observer factor) during the observation of transitive and intransitive actions (action factor) performed by human and dog agents (agent factor). N = 40 participants (n = 17 dog experts) completed an action observation and action execution task. Whole-brain analyses indicated stronger activation levels in the parietal AON during the observation of dog compared with human actions. Region of interest analyses in areas that showed action observation-execution overlap indicated that both in dog-experts and non-experts the mean activation level is higher during the observation of dog compared with human actions. However, only within the group of dog-experts, the observation of intransitive dog actions resulted in a significantly higher mean activation level compared with the observation of transitive dog actions. These results indicate that the human AON is highly sensitive to actions of non-human animals, and that future investigations are necessary to understand how other aspects, such as the value or meaning attributed to an action, may lead to the discrepant findings between experts and non-experts.

