Psychologie und Gehirn
50th Annual Conference

PuG 2025, June 18-21, 2025

Program

General Information

Host and Organizers

Department of Psychology, University of Würzburg:

Katja Bertsch, Matthias Gamer, Mona Garvert, Johannes Hewig, Andrea Kübler, Andrea Reiter, Johannes Rodrigues and Martin Weiß

Department of Psychiatry, University Hospital Würzburg:

Grit Hein and Martin Herrmann

Scientific Committee

The Psychologie und Gehirn (PuG) 2025 conference is organized in close collaboration with the *Fachgruppe Biologische Psychologie und Neuropsychologie* (FGBPNP) of the German Psychological Society (DGPs) and the *Deutsche Gesellschaft für Psychophysiologie und ihre Anwendungen* (DGPA). We thank the president of the FGBPNP, Prof. Lonsdorf and the president of the DGPA, Prof. Kirsch.

Contact

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Acknowledgements

We want to express our thanks to all sponsors for their financial support. We are grateful for the support of all postdocs, PhD students, student assistants, and secretaries in preparing and running the conference. Special thanks go to Anja Steiner and Juliane Erdinger!

Sponsors

We thank all our sponsors!

Welcome to Würzburg!

The annual conference "Psychology and the Brain (PuG)" is celebrating a major milestone this year! It is with great pleasure that we welcome you to the 50th PuG Annual Conference, which takes place from June 18–21, 2025, at the Hubland Campus of the University of Würzburg. The PuG is jointly organized by the *Fachgruppe Biologische Psychologie und Neuropsychologie* (FGBPNP) of the German Psychological Society (DGPs) and the *Deutsche Gesellschaft für Psychophysiologie und ihre Anwendung* (DGPA). The program features a rich set of scientific and networking events, including pre-conference workshops (organized by the Early Career Researchers), 35 scientific symposia, two poster sessions, a Buddy program as well as general assemblies of the organizing societies (FGBPNP, DGPA) and the Special Interest Group of Open and Reproducible Research (IGOR). Opening and social evenings at the Atrium of the venerable main building of the Julius Maximilian University and at the Nikolaushof above the rooftops of Würzburg round off the program. The three keynote lectures given by Daniela Mier, Peter Dayan and Andreas Keil will certainly be highlights of the conference. We are thrilled to gather an international community of researchers to explore developments and foster collaborations in biological psychology, neuropsychology and adjacent fields. With its central location, long academic tradition, thriving culture, mild climate and many culinary highlights, Würzburg is the perfect place for networking, exchanging scientific ideas and establishing or strengthening collaborative research that moves our field forward.

We are looking forward to welcoming you to Würzburg for celebrating the PuG's big birthday with an inspiring assembly of minds and ideas!

Best regards, the local organizing team of PuG 2025!

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Useful Information

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- Symposia: EG 0.001, 0.002, and 0.004, 1. OG 01.010 and 01.013
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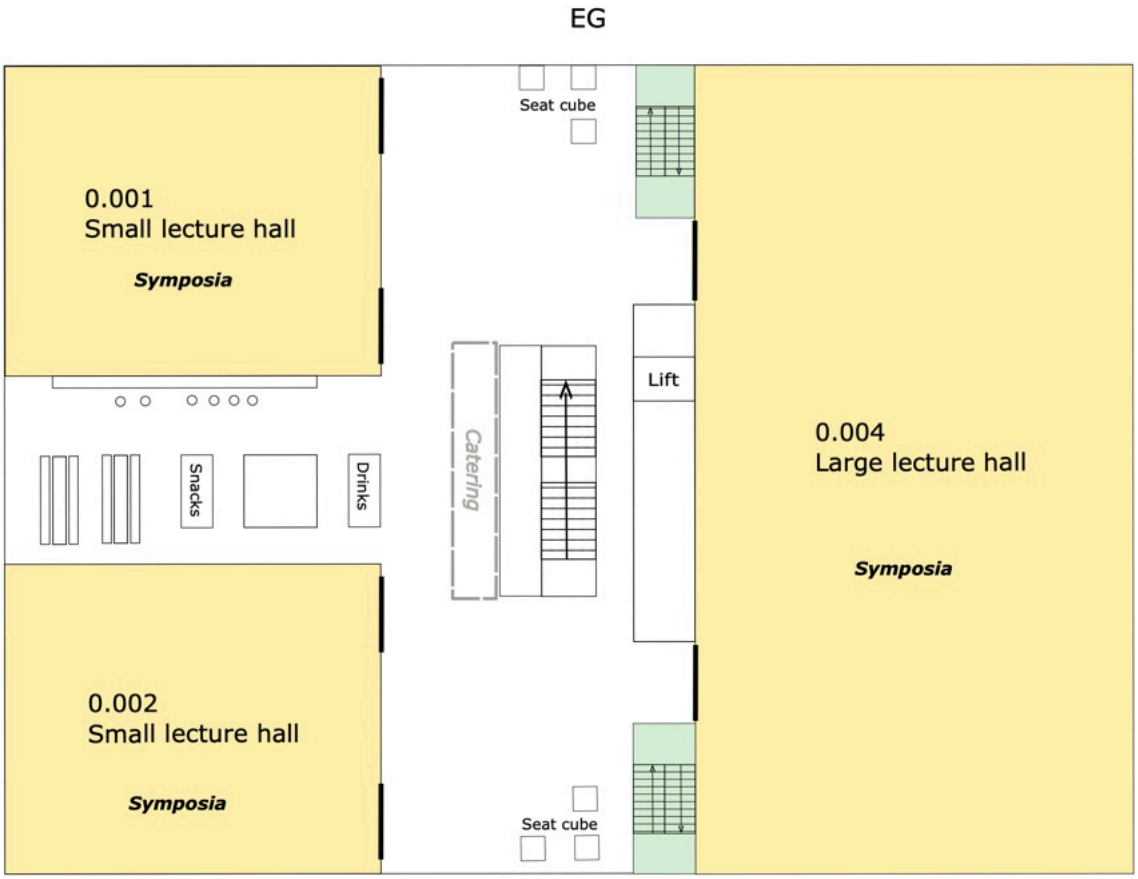
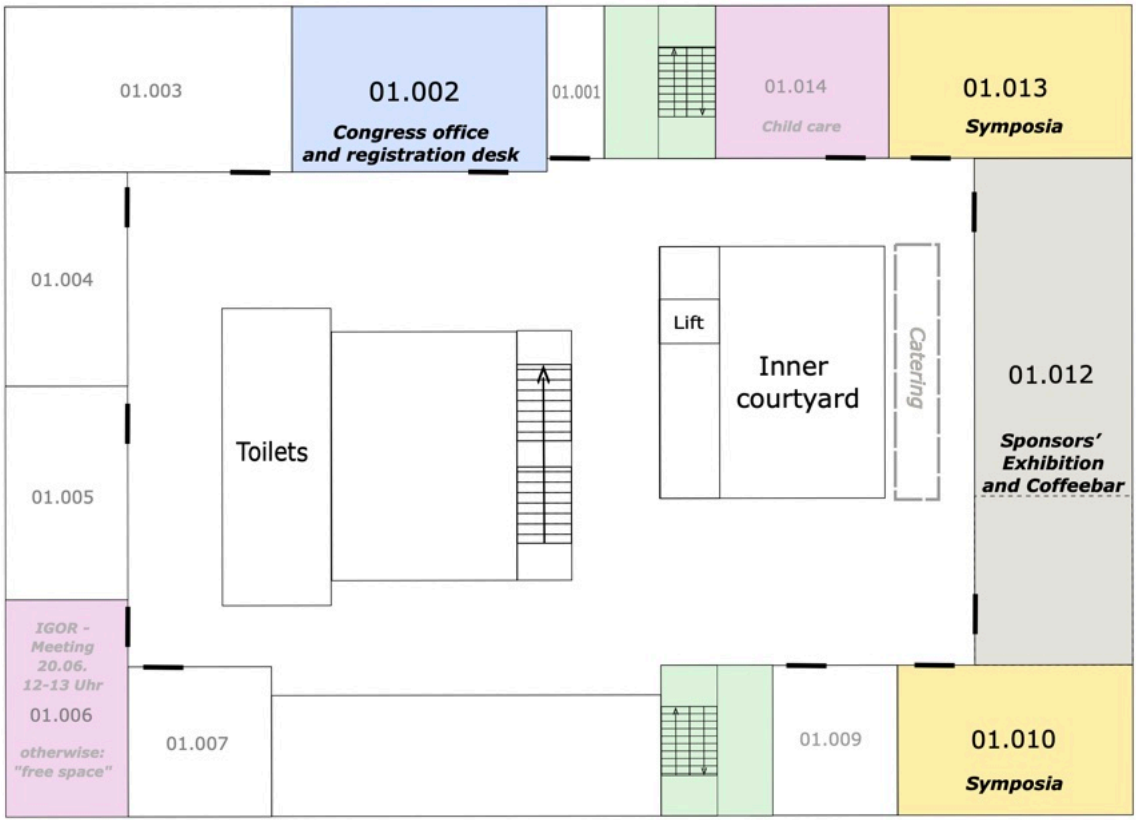
- Congress Office (Registration): 01.002
- Child Care: 01.014
- Catering: Foyer EG and 1. OG



1. OG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Congress office and registration desk
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IGOR - Meeting 20.06. 12-13 Uhr
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otherwise: "free space"
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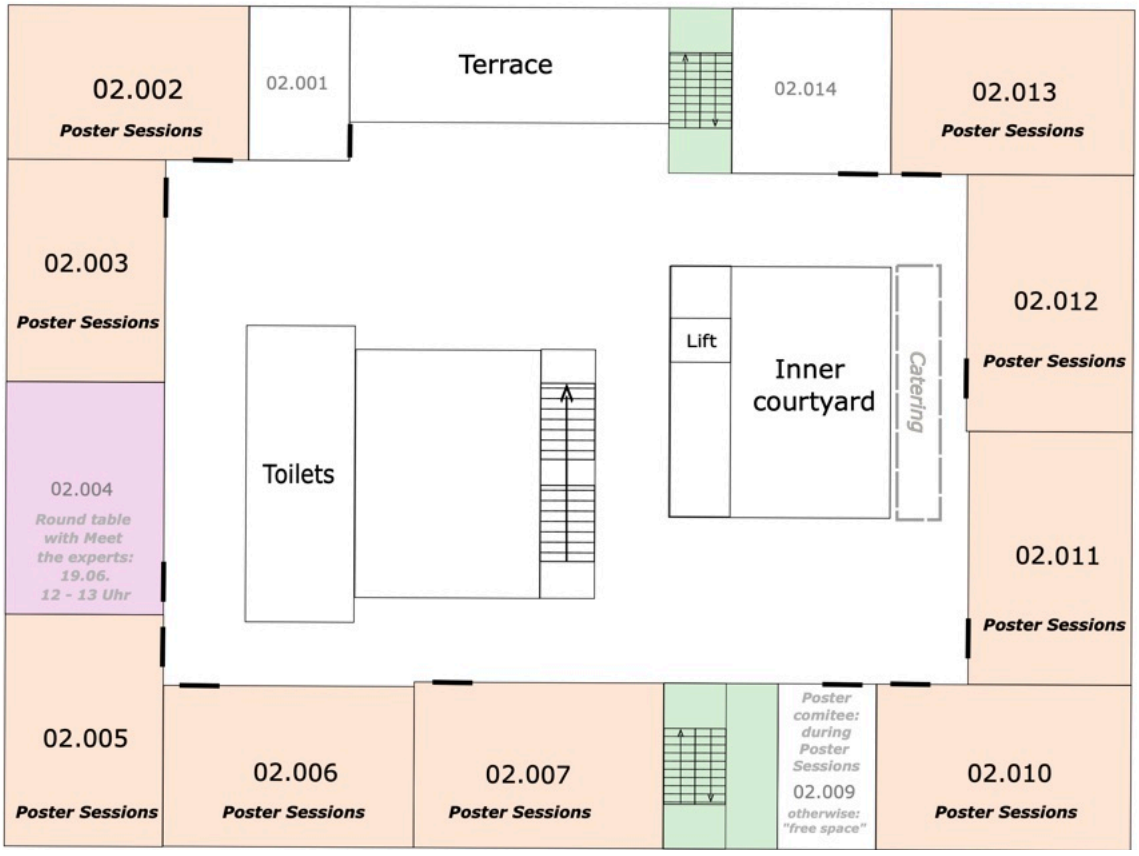
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otherwise: "free space"
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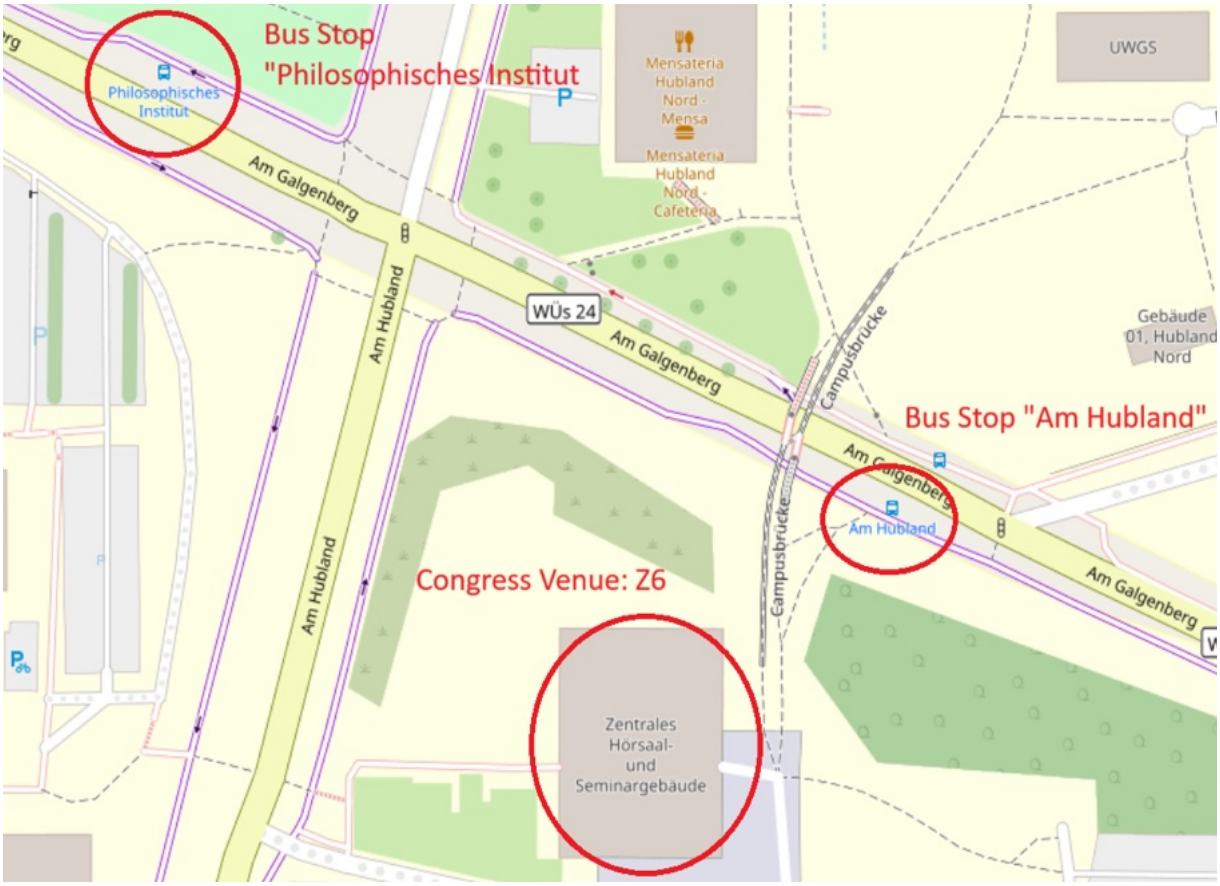
Venue and Directions

Venue

University of Würzburg, central lecture and seminar building Z6

Am Hubland

97074 Würzburg



Directions

From Würzburg Central Station (Hauptbahnhof), take bus line 14, 144, or 214 to the Hubland Süd campus.

If you take line 14, get off at the stop *Am Hubland*. Then follow the footpath that runs directly behind the Central Lecture Hall Building Z6 – there is also an entrance there.

If you take lines 144 or 214, get off at the stop *Philosophisches Institut*, cross the intersection, and turn directly onto the street *Am Hubland*. The first building on the left is the Central Lecture Hall Building Z6.

Buses take approx. 15-20 min. from Würzburg Central Station and 10-15 min. from Sanderring (https://www.wvv.de/mobil-b2c/fahrplanauskunft/)

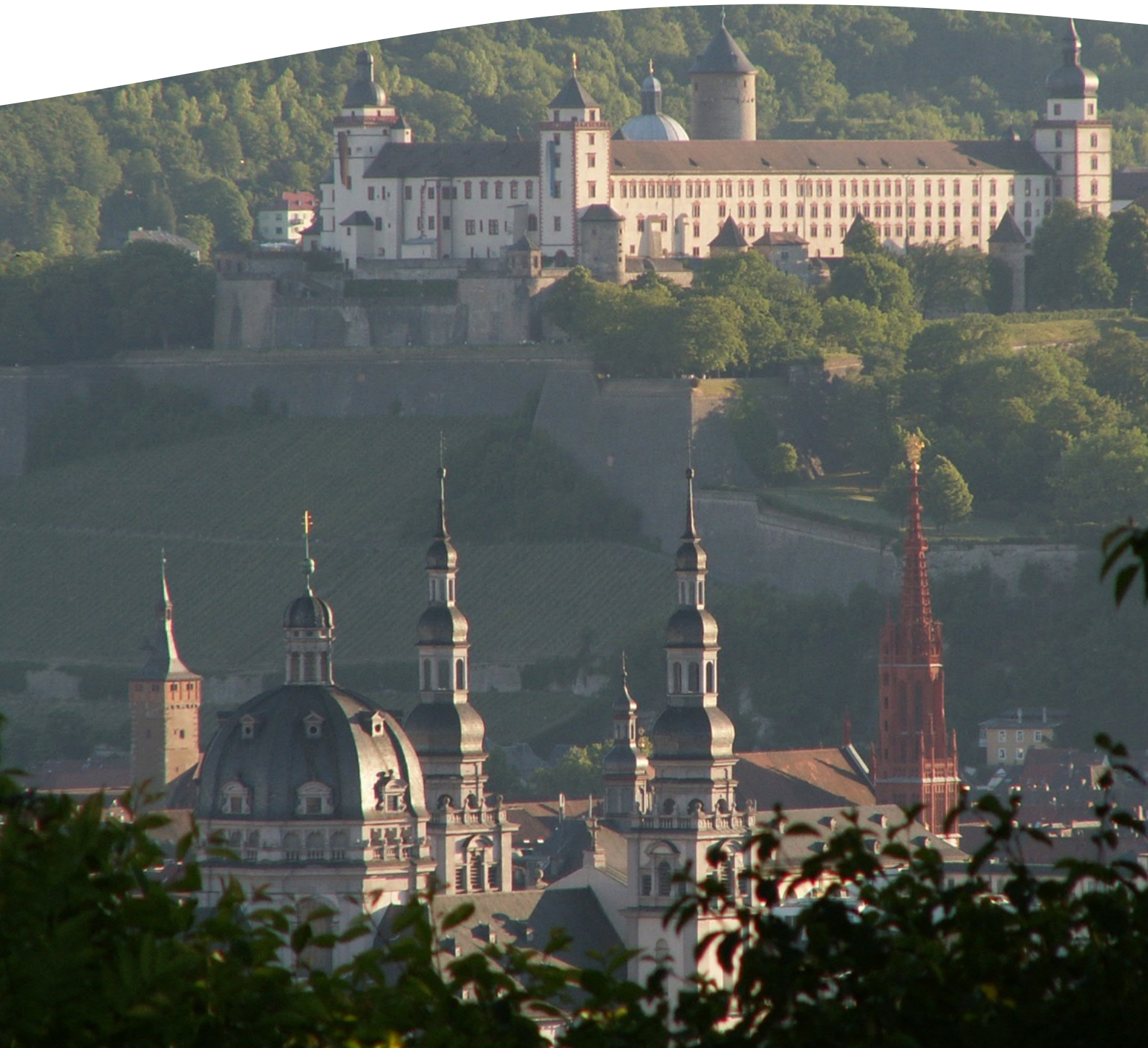
Due to the **public holiday on Thursday June 19, 2025,** there will be a **special bus shuttle** by bus company Lyst from Würzburg Central Station, Bismarckstr. (opposite

to the post office) via Sanderring to Hubland Z6 leaving Central Station at 7:45h, 8:00h, 8:15h, and 8:30h

The shuttle bus takes approx. 15 min. from Würzburg Central Station and 10 min. from Sanderring.

Childcare

Childcare is provided by the Family Service of the University of Würzburg to take care of your children while you attend the conference.



Social Events

Welcome Evening

Wednesday, June 18 | From 6 p.m. until 9 p.m.

"Lichthof"
Neue Universität
Sanderring 2
97070 Würzburg

Registration desk will be open from 6 until 9 p.m.

The location is in walking distance from Würzburg Altstadt (approx. 5 min.) and can be reached by bus or tram from Würzburg Central Station (approx. 10 min., bus stop *Neue Universität* or *Sanderring*, https://www.wvv.de/mobil-b2c/fahrplanauskunft/).

Social Evening – A Summer Night at Nikolaushof

Friday, June 20 | From 7:00 p.m. until 3:00 a.m.

Nikolaushof

Johannisweg 2

97082 Würzburg

We warmly invite you to join us for a relaxed and fun evening at Nikolaushof – a beautiful spot high above Würzburg with stunning views over the city.

The event starts at 7:00 p.m. with a tasty vegan and vegetarian barbecue buffet. The regular ticket includes dinner and two complimentary drinks. Later in the evening, we'll celebrate the winners of the Poster Prizes and the Award for Best Supervision. This year, we're also thrilled to celebrate the come-back of the PuG Band! And to keep the energy high into the early hours, DJ Goldfinger will be spinning live throughout the night!

🎟 Entry Info: Students and PhD students with a party ticket are welcome from 9:00 p.m. onwards. Your ticket includes four complimentary drinks.

Getting There

🚌 Public Transport and 🚶 Walking:

1. From the conference venue, take a bus (e.g., lines 10 or 214) to Sanderring.
2. From Sanderring, either:
    - Take a bus (e.g., lines 17, 850, or 511) to Leistenstraße, or
    - Take tram line 5 or walk (5mins) to Löwenbrücke.
    - Take bus line 35 (runs only at 18:09) - get off at Käppele to shorten the walk to Nikolaushof (5 min).
3. From Leistenstraße or Löwenbrücke, it's about a 20-minute (850m) uphill walk. We recommend the route passing Nikolausstraße and "Käppele" using the staircases (250 stairs; there are signs to "Käppele"). For more information on Käppele and the walk [Käppele am Nikolausberg | Wallfahrtskirche mit 14 Stationen]

    The effort is worth it – you'll get amazing views of the Käppele, the river Main, and Würzburg's skyline. Please note: the path is not barrier-free. Wheelchair users and individuals with restricted mobility who plan to attend the social evening, please contact pug2025@uni-wuerzburg.de in advance (i.e., latest until Thursday evening).

🛴 E-Scooter / E-Bike: Avoid the steep walk by renting an e-scooter or e-bike (e.g., Zeus).

🚕 Taxi: Taxis are a convenient option. Use Albert-Günther-Weg as the destination address for navigation systems.

Getting Back

To return to the city center, walk downhill to Löwenbrücke or Leistenstraße.

- Trams from Löwenbrücke to Sanderring/city center run until 12:30 a.m.
- After that, Night Bus 91 departs hourly from Leistenstraße.

Walking from Nikolaushof downhill to the city centre is about 30mins.

For more information about Nikolaushof, please visit their official website.

We look forward to a wonderful evening of networking, entertainment, and celebration with you at Nikolaushof!

Detailed Program

Tuesday, 17.06.2025

Workshop 1 Day 1 - Integrating Generative AI into the Research Cycle: Enhancing Discovery, Analysis and Dissemination (09:00 – 18:00)

Workshop 2 Day 1 - Multiverse Analysis for Neuroimaging (in collaboration with the DGPs Interest Group for Open and Reproducible Science IGOR) (09:00 – 18:00)

Wednesday, 18.06.2025

Workshop 1 Day 2 - Integrating Generative AI into the Research Cycle: Enhancing Discovery, Analysis and Dissemination (09:00 – 13:00)

Workshop 2 Day 2 - Multiverse Analysis for Neuroimaging (in collaboration with the DGPs Interest Group for Open and Reproducible Science IGOR) (09:00 – 13:00)

Early Career Researcher Meeting (Marcusstr. 9) (14:00 – 18:00)

Forum Biopsychology (16:00 – 18:00)

Welcome Reception New University Sanderring (18:00 – 21:00)

Thursday, 19.06.2025

Welcome address and conference opening (08:45 – 09:00)

Keynote Lecture 1: Daniela Mier: Social Cognition in Schizophrenia (09:00 – 10:00)

Imagine waiting for the bus and having the impression that people around you are hostile, looking at you, talking about you, even following you. Such experiences are typical for patients with schizophrenia who suffer from delusions. In my talk, I propose that the emergence of delusions can, at least in part, be explained by impaired social cognition, and that social-cognitive impairments, in turn, can, at least in part, be explained by aberrant salience. In the first part of my talk, I will introduce schizophrenia, the concept of aberrant salience, and findings on decision-making in schizophrenia. The second part focuses on the neural basis of social cognition in schizophrenia. Here, I will highlight the relevance of the concepts of negative bias and hypermentalizing, and their potential neural correlates in schizophrenia. In the third part, I will present findings from experimental

designs that connect aberrant salience and social cognition, offering a neurobiological social-cognitive framework for understanding how these processes interact in schizophrenia.

Coffee Break (10:00 – 10:30)

Poster Blitz (10:30 – 12:00)

Advances in Socio-emotional processing: Neural, Physiological, and Behavioral Perspectives (10:30 – 12:00)

Weiß, Martin; Lischke, Alexander

In this symposium, we present four studies that highlight the multifaceted nature of socio-emotional functioning, a key factor in interpersonal relationships, mental health, and overall well-being. By integrating physiological markers, neural correlates, and behavioral measures, we shed light on how attentional, affective, and cognitive factors shape emotional experiences across diverse contexts.

The first talk by Janna Teigeler (Würzburg) employs a novel gaze-controlled approach-avoidance paradigm, in which fixating on or averting one's gaze from emotional stimuli alters their salience. Although participants took longer to avoid than to approach, no consistent affect-congruency effects emerged, indicating complex underlying mechanisms in gaze-based emotion regulation. The second talk by Alexander Lischke (Hamburg) underscores the potential of vagally-mediated heart rate variability as a sensitive biomarker for emotion recognition, with higher variability linked to enhanced detection of nuanced expressions in both adult and child faces. Turning to trust and decision-making, the third talk by Kilian Stenzel (Marburg) demonstrates that facial trustworthiness robustly influences trust choices, with EEG measures revealing persistent neural differences when encountering trustworthy versus untrustworthy faces - even when feedback contradicts appearance. Lastly, the fourth talk by Annika Konrad (Dresden) explores empathy and theory of mind as predictors of post-traumatic stress symptoms following indirect trauma exposure. Preliminary results from a trauma film paradigm and neuroimaging point to distinct socio-affective and socio-cognitive pathways that may heighten vulnerability to trauma-related disorders.

Together, these studies underscore the importance of integrating physiological markers, neural correlates, and behavioral measures to advance our understanding of socio-emotional processes.

Development of a Novel Gaze-Controlled Approach-Avoidance Task (10:30 – 12:00)

Janna Teigeler, *Julius-Maximilians University Würzburg, Germany*; **Sabrina Gado**, *Julius-Maximilians University Würzburg, Germany*; **Michelle Frydrych**, *Julius-Maximilians University Würzburg, Germany*; **Matthias Gamer**, *Julius-Maximilians University Würzburg, Germany*

Approach and avoidance tendencies are fundamental mechanisms of behavior control. They shape our interactions with the environment and socio-emotional processing by determining whom to engage with or withdraw from. These tendencies manifest not only in goal-directed actions but also in visual attention, as motivationally relevant stimuli - such as rewarding or threatening cues - receive prioritized processing. This study examined whether typical congruency effects observed in approach-avoidance tasks also emerge when gaze behavior itself serves as the operationalization of approach and avoidance. Using a novel gaze-controlled approach-avoidance paradigm, we tested behavioral tendencies in 55 subjects (78% female, 20% male, 2% diverse). Participants were instructed to either fixate on (approach) or look away from (avoid) positive and negative IAPS images as well as emotional facial expressions (happy vs. disgusted), which appeared in peripheral vision. Fixating on a stimulus caused it to enlarge, while looking away reduced its size. We hypothesized preferential execution of affect-congruent responses - e.g., faster fixations and longer dwell times on happy faces and quicker avoidance of disgusted faces - compared to affect-incongruent responses. Results indicated that first-fixation latencies were significantly longer for avoidance than

approach reactions and were shorter for facial stimuli, suggesting that social stimuli are prioritized over non-social ones. However, no consistent latency differences emerged between congruent and incongruent trials. Dwell time analyses showed congruency effects specific to social stimuli but not IAPS images. These mixed findings suggest that gaze-based approach and avoidance behaviors may be influenced by additional cognitive and emotional factors beyond simple valence-congruency effects.

Heartrate Variability Improves the Recognition of Complex Emotional Expressions in Adult and Child Faces (10:30 – 12:00)

Alexander Lischke, *Medical School Hamburg, Germany*; **Rike Pahnke**, *University of Rostock, Germany*

During social interactions, we often have to make inferences about the intentions, thoughts and feelings of other individuals. Using these inferences as a guideline allows us to establish and maintain social relationships with these individuals. Due to the importance of social inferences for the establishment and maintenance of social relationships, the interest in biomarkers indicating the success or failure of such inferences has steadily been increasing. Vagally-mediated heartrate variability has been proposed to be a promising biomarker for social inferences, especially in the context of face processing. Although inter-individual differences in vagally-mediated heartrate variability have already been shown to be associated with inter-individual differences in emotion recognition, these associations have exclusively been studied during the processing of adult faces. Whether similar associations emerge during the processing of child faces remains unclear. To resolve this issue, we presented adult and child faces showing complex emotional expressions to adults whose vagally mediated heartrate variability had been recorded during a resting state period. By comparing inter-individual differences in emotion recognition performance with inter-individual differences in vagally-mediated heartrate variability, we were able to demonstrate that inter-individual increases in vagally-mediated heartrate variability were positively associated with inter-individual increases in emotion recognition accuracy during the processing of adult and child faces. Our findings further support the notion that inter-individual differences in vagally-mediated heartrate variability have the potential to serve as a biomarker for inter-individual differences in emotion recognition accuracy.

Facial Trustworthiness Alters Neural Activity and Trust Decisions Robustly (10:30 – 12:00)

Alexander Lischke, *Institute of Clinical Psychology and Psychotherapy, Medical School Hamburg, Hamburg, Germany*; **Kilian Stenzel**, *Department of Psychology, Div. of Clinical Psychology & Psychotherapy, Philipps-University of Marburg, Marburg, Germany*; **Marko Paelecke**, *Department of Psychology V: Differential Psychology, Personality Psychology and Psychological Diagnostics, Institute of Psychology, University of Würzburg, Würzburg, Germany*; **Johannes Rodrigues**, *Department of Psychology V: Differential Psychology, Personality Psychology and Psychological Diagnostics, Institute of Psychology, University of Würzburg, Würzburg, Germany*; **Johannes Hewig**, *Department of Psychology V: Differential Psychology, Personality Psychology and Psychological Diagnostics, Institute of Psychology, University of Würzburg, Würzburg, Germany*

Despite the well-known impact of trustees' facial properties on trustors investments, the neural processes underlying the trustors judgments of trustees' trustworthiness remain ambiguous. Thus, we investigated the effect of facial trustworthiness and partner feedback on trust decisions and electrocortical correlates. Therefore, we recorded trust choices and EEG of 124 subjects playing the Trust Game with partners having either trustworthy or untrustworthy faces (three blocks of 40 trials). Facial, and behavioral trustworthiness were randomly associated. Each face only appeared once. In each trial, subjects saw a face before making a trust or distrust decision. Subsequently, they received outcome feedback for themselves and their partner simultaneously. Although outcomes after distrust choices were fixed, they received feedback indicating the hypothetical outcomes as if they had trusted. Trustworthy faces elicited more trust

choices. This was preceded by more pronounced ERP amplitudes of the EPN, P3a, P3b, and less pronounced amplitudes of the FRN in response to untrustworthy faces. Despite the lack of association between facial, and behavioral trustworthiness, subjects did not adjust their trust decision behavior across blocks. Significant ERP differences between trustworthy and untrustworthy faces were not attenuated across blocks. After trust choices, negative feedback led to more pronounced FRN, which was reversed after a distrust choice. This suggests that facial trustworthiness alters neural processing by inducing a positivity from the EPN to the late P3b shaping trust behavior robustly. FRN to feedback rather indicates an evaluation of the subject's actual gain instead of the partner's trustworthiness.

The Role of Empathy and Theory of Mind in the Development of Symptoms After Witnessed Trauma: An fMRI Study (10:30 – 12:00)

Annika Konrad, *TU Dresden, Germany*; **Fee Fuchs**, *MSH Medical School Hamburg, Germany*; **Sebastian Trautmann**, *MSH Medical School Hamburg, Germany*; **Philipp Kanske**, *TU Dresden, Germany*

People are increasingly exposed to traumatic events, such as wars and environmental disasters. Simply witnessing these events may trigger post-traumatic stress symptoms. Mechanisms underlying witnessed trauma could include the ability to empathize with others suffering or to adopt their perspective (theory of mind). However, it remains unclear whether empathy, theory of mind, or their underlying brain activity contribute to symptom development following trauma exposure. To identify individuals at risk, it is crucial to examine these socio-affective and socio-cognitive mechanisms involved in post-traumatic stress symptom development. This multicenter study explores the role of empathy and theory of mind in the risk of symptom development after witnessing trauma. Data were collected using a trauma analog model (the Trauma Film Paradigm), psychophysiological measures, an experimental task assessing empathy and theory of mind (EmpaToM), and an e-diary tracking symptoms during the week following the laboratory visit. A subset of participants also underwent magnetic resonance imaging during both the Trauma Film Paradigm and EmpaToM. Hypotheses are preregistered (https://osf.io/r9486). We present the preliminary analysis of data from N = 114 female participants. Regression models will be applied to predict symptom development based on empathy- and theory of mind-related brain activity and self-reported measures. The results will help identify key mechanisms involved in the impact of witnessing traumatic events. In particular, differentiating between socio-affective and socio-cognitive pathways could improve our understanding of who is most at risk for developing symptoms after trauma exposure. This distinction could ultimately inform the development of preventive measures for trauma-related disorders.

Behavioral Adaptation Under Uncertainty Across Development: Implications for Mental Health Risk (10:30 – 12:00)

Reiter, Andrea; Shing, Yee Lee

This symposium brings together four contributions exploring the development of behavioral adaptation under uncertainty from childhood to adulthood, utilizing fMRI, computational modeling, and ecological momentary assessment.

Maria Waltmann presents findings from an fMRI study on probabilistic reversal learning in adolescents with and without childhood maltreatment. Maltreated adolescents exhibit quicker adaptation in win-seeking contexts, with enhanced perception of environmental volatility and significant involvement of the right dorsolateral prefrontal cortex, suggesting neurocognitive adaptations to unpredictable environments.

Johannes Falck discusses the impact of individual (e.g., body-mass-index BMI) and environmental (familial psychopathology, socio-economic status SES) risk factors on reinforcement learning in a developmental study. Higher BMI and lower SES predict parameter differences, while familial psychopathology and low SES moderate symptom-parameter relationships, influencing learning outcomes and decision-making.

Gabriele Chierchia examines the development of strategic social decision-making in adolescents through a tacit coordination task. Adolescents increasingly adapt decisions to cooperative and competitive incentives, with significant developmental changes in decision variability and response times, highlighting adolescence as a critical period for developing strategic social abilities.

Klara Gregorova explores the influence of social feedback on self-esteem across age groups and clinical populations. Using an experimental paradigm and ecological momentary assessment, the study shows self-esteem reactivity to social feedback increases during adolescence and decreases in adulthood. Participants with Borderline Personality Disorder exhibit negatively biased expectations of being liked, despite receiving positive feedback.

Together, these contributions provide a comprehensive understanding of behavioral adaptation in children and adolescents, emphasizing their relevance for understanding mental health risk factors during development.

Childhood Maltreatment Promotes Flexibility in Win-Seeking Contexts in Adolescence (10:30 – 12:00)

Maria Waltmann, *University Hospital Würzburg; University of Würzburg; Max-Planck-Institute for Human Cognitive and Brain Sciences*; **Charlotte Schulz**, *Max-Planck-Institute for Human Cognitive and Brain Sciences; University Hospital Leipzig*; **Lars White**, *University Hospital Leipzig; University of Bremen*; **Lorenz Deserno**, *University Hospital Würzburg*

Childhood maltreatment significantly impacts mental health, but the underlying neurocognitive mechanisms remain unclear. While previous research shows that maltreatment alters threat and reward processing, its effects on value-based learning and decision-making are not well understood. We investigated how maltreatment influences learning and decision-making in volatile environments focused on win-seeking and loss-avoidance, respectively. Adolescents with (n=59) and without (n=46) maltreatment exposure completed a probabilistic reversal learning task with a win and a loss block during fMRI. Computational modeling using a Hidden Markov Model showed that, relative to non-maltreated peers, maltreated adolescents had lower estimates of environmental stability in the win condition, which led to enhanced behavioral flexibility and improved performance after reversals. This phenotype was accompanied by reduced right dorsolateral prefrontal cortex activation associated with upcoming reversals. Within the maltreatment group, lower estimates of stability in the win condition were correlated with psychiatric symptoms. Interestingly, despite the advantage they conferred after reversals, lower estimates were also linked to impaired performance during stable task phases in this group. Taken together, our findings thus challenge the view that maltreatment uniformly impairs cognitive function. Instead, they suggest that maltreatment may lead to specific adaptations that enhance cognitive-behavioral flexibility in win-seeking contexts, which can be advantageous in volatile environments. However, if excessive, these adaptations may lead to maladaptive decision-making in stable contexts, potentially contributing to psychopathology. Our study thus provides novel insights into how early adversity shapes reinforcement learning and decision-making at a neurocomputational level, with implications for understanding the development of psychopathology.

The Impact of Individual and Environmental Risk Factors on Reinforcement Learning during Development: Influence of BMI, Socioeconomic Status, and Familial Psychopathology (10:30 – 12:00)

Johannes Falck, *Goethe University Frankfurt, Germany; Heidelberg University, Germany*; **Yee Lee Shing**, *Goethe University Frankfurt, Germany*

Mental health influences adaptive behavior during Reinforcement learning (RL), but the impact of individual and environmental risk factors during development remains unclear. We examined how body mass index (BMI), familial psychopathology (FHP), and socioeconomic status (SES) influence RL and moderate symptom-RL relationships. Using a cross-sectional developmental dataset (study 1, age 8-18, n=122, clinical and non-clinical individuals), we tested these effects and validated symptom-independent effects in two developmental non-clinical datasets (study 2, n=60, age 6-9, 13-16; study 3, n=141, age 6-7, longitudinal 2-year follow-up). Higher BMI predicted lower reward learning rates in studies 1 and 2. In study 3, BMI predicted lower cross-sectional learning rates in girls under delayed feedback and lower learning rate gains longitudinally. Lower parental SES predicted lower learning rates in study 1 (education, occupation status) but showed no effects in study 2. In study 3, lower SES predicted both lower cross-sectional learning rates (income), and higher learning rates in girls (occupation status), along with reduced longitudinal learning rate gains from delayed feedback in girls (income, occupation status). Familial psychopathology did not predict RL parameters directly. Instead, the presence of psychopathology among first and second-degree relatives as well as lower SES predicted larger detrimental effects on RL parameters in relation to symptoms of depression, anxiety and ADHD. In conclusion, while risk factors such as familial psychopathology and lower SES moderated symptom-RL parameter links, higher BMI and lower SES predicted RL parameter differences and longitudinal changes that largely align with effects of psychopathology symptoms.

With or Against Me? Cooperative and Competitive Decision Making Under Uncertainty in Adolescents and Young Adults (10:30 – 12:00)

Gabriele Chierchia, *University of Pavia, Pavia, Italy*; **Serena Maria Stagnitto**, *University of Pavia, Pavia, Italy*; **Elvis Kurtisi**, *University of Pavia, Pavia, Italy*; **Sarah-Jayne Blakemore**, *University of Cambridge, Cambridge, United Kingdom*; **Serena Lecce**, *University of Pavia, Pavia, Italy*

Many situations require coordinating decisions with others without communicating. To navigate this social uncertainty, adults have been shown to tune their decisions to the cooperative or competitive incentives at play. Here, we investigate if this ability is stable or increases with age during adolescence. 722 participants aged 9 to 26 completed a tacit coordination task that we adapted for youths. Participants aimed to maximize gold coins by choosing between a low-paying safe option and a higher-paying but uncertain option. In the cooperative condition, two paired anonymous participants could both maximize coins if they both chose the uncertain option without communicating. In the competitive condition, only one participant could maximize coins by choosing the uncertain option alone; if both chose it, neither won. A non-social control condition employed a random lottery. No feedback was provided, so participants could only rely on the incentives at play. We found that, in the cooperative relative to the competitive and control conditions, participants were more likely to choose the uncertain option, and this tendency increased markedly with age during adolescence. Moreover, in the competitive relative to the other conditions, adults displayed heightened decision variability and longer response times, while the youngest participants in our sample, nine-year-olds, did not. This competitive decision-making signature only emerged during adolescence and continued increasing into adulthood. These results suggest that adolescence is a particularly important age window for the development of strategic abilities under uncertainty. These abilities could be used to phenotype typical and atypical social development.

Self-Esteem Reactivity towards Social Feedback in Adolescents with and without symptoms of Borderline Personality Disorder (10:30 – 12:00)

Klara Gregorova, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany; Department of Psychology, Julius-Maximilians-University of Würzburg, Würzburg, Germany*; **Maria Waltmann**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany*; **Geert-Jan Will**, *Department of Clinical Psychology, Utrecht University, Utrecht, Netherlands*; **Sabrina Mittermeier**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany*; **Arne Bürger**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany*; **Marcel Romanos**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany*; **Lorenz Deserno**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany*; **Andrea Reiter**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; German Center of Prevention Research on Mental Health, Würzburg, Germany; Department of Psychology, Julius-Maximilians-University of Würzburg, Würzburg, Germany*

Self-esteem is an important cornerstone of mental health across the lifespan. Throughout life, but perhaps particularly during adolescence, self-esteem is shaped by appraisals from other people. Previous work showed that momentary fluctuations in self-esteem are best explained not only by whether we are liked by others, but whether we are liked more or less than we expected. However, it is not known whether adolescents and adults, or adolescents with and without pathological instability (i.e., symptoms of Borderline Personality Disorder) differ therein. Therefore, the present study investigated age- and symptom-related differences in the extent to which self-esteem is shaped by social experiences. Study 1 included 141 typically developing participants (10 to 40 years) while study 2 included 55 patients with BPD symptoms and 69 healthy controls (13-25 years). We conducted an experimental paradigm that simulated peer evaluation in a social media context and complemented them by real-life Ecological Momentary Assessment. Across development, self-esteem reactivity in response to unexpected social feedback increased during adolescence and decreased during adulthood. Real-life self-esteem reactivity decreased with age in response to the pleasantness of previous social interactions. Both measures were related. In the clinical sample, patients reacted more strongly to feedback received from unkind raters, which was associated to dysfunctional parental styles. Beyond self-esteem reactivity, patients showed largely negatively biased expectations about being liked, which persisted and could not be corrected by positive feedback. These findings provide insights into the strong role of social determinants of self-esteem and the specificity of developmental versus pathological changes.

Non-invasive Neuromodulation Approaches to Support Functional Recovery in Stroke: Experimental Advances and Future Directions (10:30 – 12:00)

Thiel, Christiane M; Herrmann, Christoph S

Stroke is the third leading cause of death worldwide and a major cause for long-term disability, with limited therapeutic options to support functional recovery. Many stroke survivors face persistent motor and cognitive impairments, highlighting the urgent need for innovative rehabilitation strategies. Non-invasive neuromodulation, including electrical and magnetic brain stimulation and neurofeedback, has emerged as a promising approach to enhance post-stroke recovery. By targeted modulation of brain activity, several approaches have shown promising effects that may improve functional outcomes, yet many questions remain about optimal protocols and mechanisms of action. This symposium will bring together leading researchers and early career scientists working at the intersection of stroke recovery and neuromodulation to discuss current challenges and opportunities in the field. Gesa Hartwigsen (Leipzig) will provide insights into longitudinal trajectories of language recovery after stroke, identifying general principles of neural

reorganization. Rebekah Bruckner (Oldenburg) investigates localization techniques for frontal midline theta activity using combined MEG and MRI data in older adults and stroke patients to optimize targeting for transcranial alternating current stimulation. Jennifer Decker (Oldenburg) will present pilot data of an intensive at home-based motor imagery neurofeedback training approach to enhance motor recovery. Sonja Kleih-Dahms (Würzburg) will discuss the role of neurofeedback-based approaches to enhance attention and the potential of brain-computer interfaces for post-stroke aphasia rehabilitation in patients with chronic symptoms. By addressing how neuromodulation strategies can support recovery across different stroke-related impairments, this symposium will provide an overview of current advances and highlight promising directions for future research and clinical application.

Mapping Longitudinal Neural Reorganization in the Language Network After Stroke (10:30 – 12:00)

Gesa Hartwigsen, *Wilhelm Wundt Institute for Psychology, Leipzig University, Germany; Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*

Language is organized in distributed networks in our brain. Stroke often severely affects language processing, leading to disrupted interactions within the language network. Previous work has demonstrated that language recovery relies on the contribution of perilesional and contralesional language areas as well as the recruitment of domain-general support functions for attention and cognitive control. However, it is unclear how the underlying large-scale networks interact during language recovery. In this talk, I will present new data highlighting longitudinal changes in task-related activity and connectivity during language processing across the time course of language recovery after stroke. I will demonstrate that language recovery is a dynamic process engaging different principles of reorganization: Early facilitation from domain-general to language regions is associated with later language improvement. Specific connectivity patterns depend on lesion location and time after stroke. Moreover, aside from such across-network reorganization, later recovery engages increased within-network connectivity between core language areas. Complementing these principles of network recovery, in a second study, we used a multivariate approach to identify factors of recovery, demonstrating that beyond age and lesion site, changes in task-related activity and task-related connectivity contribute to predicting favorable language recovery. Finally, I will discuss how these studies may inform future approaches of personalized treatment with non-invasive brain stimulation, informing a dynamic model of transcranial magnetic stimulation with different stimulation protocols at different phases of language recovery.

Optimizing Transcranial Alternating Current Stimulation (tACS) to Target Frontal Midline Theta in Older Participants and Stroke Patients (10:30 – 12:00)

Rebekah Brueckner, *University of Oldenburg, Germany; Research Training Group 2783 (RTG Neuromodulation*; **Jale Oezyurt**, *University of Oldenburg, Germany; Research Training Group 2783 (RTG Neuromodulation*; **Christoph S. Herrmann**, *University of Oldenburg, Germany; Research Training Group 2783 (RTG Neuromodulation*; **Christiane M. Thiel**, *University of Oldenburg, Germany; Research Training Group 2783 (RTG Neuromodulation*; **Florian H. Kasten**, *University of Trier, Germany*

Frontal Midline Theta (FM) activity has been shown to increase during more cognitively challenging executive functioning tasks in younger individuals and is linked to performance improvement. Older adults, however, have been shown to have a reduction in both FM and executive functioning when compared to their younger counterparts. Transcranial Alternating Current Stimulation (tACS) can enhance frequency-specific neural activity via entrainment, but its effectiveness is limited by individual variability, which may be greater in older adults due to age-related brain changes. This study proposes an analysis pipeline for targeting FM activity in older healthy adults using structural MRI and task-related (visual GoNoGo) MEG data. An MEG time series of each trial was projected into source space using an LCMV beamformer. Time-frequency representations were computed from these time series and grand averaged. A dependent sample cluster permutation t-test was used to compare activity in FM between

the Go and NoGo conditions. A significant activation cluster ($p < 0.05$) was identified that was used as a target for E-field modeling. Functional FM source localization was combined with E-field modeling (SimNIBS) to determine individualized electrode placement and stimulation intensity. Modeling in both chronic stroke lesioned and healthy brains allows comparison of target performance, offering a novel method to potentially enhance cognitive function through FM modulation in aging and post-stroke populations.

The MINTS Study: Pilot Data on Home-Based Motor Imagery Neurofeedback Training in Stroke Rehabilitation (10:30 – 12:00)

Jennifer Decker, *Carl von Ossietzky University Oldenburg, Dept. Psychology, Neuropsychology Lab, Oldenburg, Germany*; **Cornelia Kranczioch**, *Carl von Ossietzky University Oldenburg, Dept. Psychology, Neuropsychology Lab, Oldenburg, Germany*

Motor imagery (MI) neurofeedback (NF) training is a promising approach for motor rehabilitation after stroke. MI-NF training offers a non-invasive method to promote neuroplasticity and motor recovery, even in the absence of residual movement. However, its implementation outside controlled laboratory settings remains challenging, and the underlying neural mechanisms are not yet fully understood. In this talk we will introduce the MINTS study (Motor Imagery Neurofeedback Training in Stroke Survivors), which investigates the feasibility and neural effects of intensive, home-based MI-NF training with mobile EEG in chronic stroke survivors. Using an across-subjects multiple baseline design, participants engage in a structured MI-NF protocol over four weeks, accompanied by extensive pre- and post-assessments, including motor and cognitive testing, EEG, and fMRI. The primary objective is to examine MI-NF-related changes in resting-state functional connectivity, while secondary outcomes focus on lateralization shifts in brain activity, structural and functional brain adaptations, and motor function improvements. To evaluate the feasibility of the study design, we conducted a single-case pilot study with a reduced training duration and a subset of the MINTS protocols pre- and post-assessment points. The collected data will be presented and discussed with regard to the practical implementation of MI-NF training at home, including aspects such as participant adherence, technical feasibility and training practicability. A detailed study protocol is currently in preparation for publication. Collected data and analysis scripts will be shared within the Research Training Group 2783 and the University of Oldenburg, and will be made accessible to the scientific community in the future.

Brain-Computer Interfaces Based Cognitive Rehabilitation After Stroke (10:30 – 12:00)

Sonja Kleih-Dahms, *University of Würzburg, Germany*; **Loic Botrel**, *University of Würzburg, Germany*

Stroke is a major cause of disability and death worldwide. Although there are many interventions available for motor and cognitive rehabilitation during the sub-acute phase after a stroke, there are not many treatment options for people with chronic deficits. Once a patient in Germany has completed outpatient neuropsychological, or speech therapy training (covered by health insurance), no further treatment options are available. To address this gap in healthcare provision, we developed new interventions for cognitive rehabilitation after stroke for two groups of patients: patients with chronic post-stroke aphasia and patients with chronic post-stroke attention deficits. Both groups of patients had exhausted all other treatment options and had reported negative impact on of their chronic cognitive deficits on their daily lives. We showed a Brain-Computer Interface (BCI) spelling application based on event-related potentials for rehabilitating post-stroke aphasia to be feasible, however the specificity of the intervention to improve spontaneous speech remains uncertain. We also investigated a neurofeedback-based intervention for rehabilitation of post-stroke attention deficits and showed its feasibility and that behavioral indicators of attention improved after as compared to before the

neurofeedback training. However, further research is required to corroborate the results of the presented rehabilitation approaches.

Active Inference in Psychiatry: Understanding Mechanisms of Psychopathology (10:30 – 12:00)

Eckert, Anna-Lena; Sterner, Elisabeth

Over the last decades, computational theories have transformed our understanding of the mind in both health and psychiatric disorders. Active Inference unifies perception, action, and learning under the mantle of Bayesian inference, where they emerge resulting from an agents drive to minimize free energy. This symposium brings together researchers who have applied Active Inference to behavioral and neural data in diverse mental health conditions, offering novel insights into underlying mechanisms.

First, Ryan Smith will discuss research on mechanisms of interoceptive Bayesian inference in affective and substance use disorders, shedding light on deficits in how individuals perceive their own bodily state. Riccardo Maromotti will present insights on illness awareness in Alzheimer's patients using a novel active inference model for the emotional Stroop task. Elisabeth Sterner will focus on the use of Active Inference to explain aberrant action selection in psychosis, providing insights into cognitive and behavioral disruptions seen in conditions like schizophrenia. Anna-Lena Eckert will present findings from a study of generative models in interpersonal behavior in depression, where aberrant model parameters lead to maladaptive social decisions in a trust game context. Finally, Andreea Diaconescu will present transdiagnostic findings using Active Inference to model suicide risk across psychiatric conditions.

Together, these presentations illustrate how Active Inference offers a cohesive computational approach to modeling diverse clinical phenomena, with implications for diagnosis and treatment. The symposium will foster discussions on the future directions and the potential of applying the Active Inference framework in clinical research, as well as current challenges and limitations.

Computational Modeling Reveals Transdiagnostic Deficits in Interoceptive Inference (10:30 – 12:00)

Ryan Smith, *Laureate Institute for Brain Research, United States of America*

How the brain detects and interprets signals from within the body - a process known as interoception - may play an important role in generating subjective feelings and contribute to psychiatric disorders. While interoception has received growing attention from researchers in recent years, the precise computational mechanisms through which the brain processes interoceptive signals remain unclear. In this talk, I will present recent computational modelling studies we have performed to better characterize these mechanisms across cardiac and gastrointestinal interoception. First, I will describe newly replicated results of modeling heartbeat perception as Bayesian inference, which suggest that subjective estimates of the reliability (precision) of cardiac signals may be less flexible in multiple psychiatric patient samples (depression, anxiety, substance use, and eating disorders) relative to healthy participants. Second, I will describe results of modeling gastrointestinal (GI) perception in a similar manner during EEG recording. As hypothesized, results show that individual differences in prior expectations, and in subjective estimates of the precision of GI signals, have inhibitory and excitatory influences on neural responses, respectively. Data also suggest stronger prior expectations against feeling stomach sensations in eating disorders, and asymmetric learning rates that maintain this bias. Overall, these results provide evidence for neurocomputational mechanisms of brain-body interactions across multiple interoceptive channels. They may also highlight novel mechanistic treatment targets that could be evaluated in future clinical studies.

Active Inference and Psychological Tests: Modeling Cognition and Its Impairments (10:30 – 12:00)

Riccardo Maramotti, *University of Modena and Reggio Emilia, Italy*; **Thomas Parr**, *University of Oxford*; **Manuela Tondelli**, *University of Modena and Reggio Emilia, Italy*; **Daniela Ballotta**, *University of Modena and Reggio Emilia, Italy*; **Giovanna Zamboni**, *University of Modena and Reggio Emilia, Italy*; **Giuseppe Pagnoni**, *University of Modena and Reggio Emilia, Italy*

Active inference is a theoretical framework that integrates perception and action, modeling behavior as an inferential process where actions are probabilistically selected based on prior knowledge and sensory input. In this talk, I will present an active inference model of the color-word Stroop task to investigate how voluntary mental effort influences cognitive control. Twenty healthy young adults performed the Stroop task under two conditions: exerting maximal effort or responding as relaxed as possible. Their behavior was analyzed using a two-layer Partially Observable Markov Decision Process (POMDP) that estimated two key parameters: each participant's bias toward reading words (vs. reporting colors) and their motivation for accurate performance. Results indicated that voluntary effort selectively increased motivation for correct responses without altering habitual biases, suggesting that effort primarily enhances internal motivation rather than directly modulating habitual behaviors. In the second part of the talk, I will extend this modeling approach to Anosognosia, a neurodegenerative condition characterized by a lack of illness awareness. This phenomenon can be examined using the Emotional Stroop task, another color-naming paradigm that measures interference from emotionally charged words (neutral, negative, and disease-related). Here, the POMDP model incorporates parameters for the salience of negative and disease-related words, allowing us to explain increased reaction times for disease-related words as a potential marker of implicit disease awareness. These findings have critical clinical implications, as impairments in effort regulation and illness awareness are common in neurodegenerative disorders such as Alzheimer's disease.

Action Selection in Early Stages of Psychosis: An Active Inference Approach (10:30 – 12:00)

Franziska Knolle*, *Department of Diagnostic and Interventional Neuroradiology, School of Medicine, Technical University of Munich, Munich, Germany; Department of Psychiatry, University of Cambridge, Cambridge, UK*; **Elisabeth F. Sterner***, *Department of Diagnostic and Interventional Neuroradiology, School of Medicine, Technical University of Munich, Munich, Germany*; **Michael Moutoussis**, *Max Planck-UCL Centre for Computational Psychiatry and Ageing Research, London, UK*; **Rick Adams**, *Max Planck-UCL Centre for Computational Psychiatry and Ageing Research, London, UK; Centre for Medical Image Computing, Department of Computer Science, University College London, London, UK*; **Juliet Griffin**, *Department of Psychiatry, University of Cambridge, Cambridge, UK*; **Joost Haarsma**, *Wellcome Centre for Human Neuroimaging, University College London, London, UK*; **Hilde Taverne**, *Department of Psychiatry, University of Cambridge, Cambridge, UK; University of Amsterdam, Amsterdam, NL*; **Ian M. Goodyer**, *Department of Psychiatry, University of Cambridge, Cambridge, UK; Wellcome Trust MRC Institute of Metabolic Science, University of Cambridge, Cambridge Biomedical Campus, Cambridge, UK*; **Paul C. Fletcher**, *Department of Psychiatry, University of Cambridge, Cambridge, UK; Wellcome Trust MRC Institute of Metabolic Science, University of Cambridge, Cambridge Biomedical Campus, Cambridge, UK; Cambridgeshire and Peterborough NHS Foundation Trust, Cambridge, UK*; **Graham K. Murray**, *Department of Psychiatry, University of Cambridge, Cambridge, UK*

To navigate their environment, humans need to build an internal model of the world to interpret ambiguous inputs. Inaccurate models, as suggested to be the case for individuals with psychosis, can disturb optimal action selection. Recent computational models, such as active inference, have emphasized the importance of action selection as a key part of the inferential process. Based on an active inference framework, we investigated the use of previous knowledge and belief precision in an action-based task, given that alterations in these parameters have been linked to the development of psychotic symptoms. We also assessed whether task performance and modelling parameters could classify patients and controls. Methods: 23 individuals with an at-risk mental state, 26 patients with first-episode psychosis and 31 controls completed a probabilistic task in which action choice (go/no-go) was dissociated from outcome

valence (gain or loss). We evaluated group differences in performance and active inference model parameters and performed receiver operating characteristic (ROC) analyses to assess group classification. Results: We found reduced overall performance in patients with psychosis. Active inference modelling revealed that patients showed increased forgetting, reduced confidence in policy selection and less optimal general choice behaviour, with poorer action-state associations. Importantly, ROC analysis showed fair-to-good classification performance for all groups, when combining modelling parameters and performance measures. Conclusion: Active inference modelling of this task provides further explanation for dysfunctional mechanisms underlying decision-making in psychosis and may be relevant for future research on the development of biomarkers for early identification of psychosis.

Altered Active Inference of Interpersonal Context in Depression (10:30 – 12:00)

Anna-Lena Eckert, *Theoretical Cognitive Science Group, Philipps-Universität Marburg, Germany*; **Lukas Kirchner**, *Klinische Psychologie und Psychotherapie, Justus-Liebig-Universität Gießen, Germany*; **Winfried Rief**, *Klinische Psychologie und Psychotherapie, Philipps-Universität Marburg, Germany*; **Dominik Endres**, *Theoretical Cognitive Science Group, Philipps-Universität Marburg, Germany*

Social interactions are computationally challenging due to several volatile, unobservable factors at play. Interpersonal difficulties are common in mental disorders, but formal models of interpersonal functioning in psychiatry remain limited. The Active Inference (ActInf) framework puts inference over hidden states at the core of perception, action and learning and provides a suitable framework to investigate interpersonal decision-making in health and disorder. For this study, N=56 controls and N=47 outpatients with depression played a Trust Game, where they can keep or invest a small monetary amount. If they invest, the amount is tripled, but they play against a partner who can decide to share the win evenly, or to defect. The game context was cooperative (80% returned investments) or hostile (20% returned). Participants were randomized to the game conditions. Across contexts, controls earned higher rewards (M=30.82) than patients (M=29.86, p<0.05). To model decision-making, we fit a POMDP generative model with ActInf to participants' behavior, obtaining estimates for subject-specific parameters (i.e. matrices A, B, C, D, and epistemic drive epsilon). On average, controls showed a higher preference for keeping their money (Controls C=0.89, Patients C=0.77), and group-level behavior was best described by an increased epistemic drive in patients (Controls epsilon=0.51, patients epsilon=0.67). Across groups, we find a correlation between prosociality and epistemic drive epsilon (r=0.25, p=0.01). We are currently investigating parameter recoverability, and the accuracy of diagnostic classifiers trained on generative model parameters. These findings suggest that ActInf, coupled with behavioral data, can provide computational-level insights into altered social cognition in depression.

Computational Mechanisms of Hopelessness and Pavlovian Biases in Suicidality: Integrating Active Inference and Reinforcement Learning Models (10:30 – 12:00)

Andreea O. Diaconescu, *Centre for Addiction and Mental Health, Toronto, Canada; Department of Psychiatry, University of Toronto, Toronto, Canada; Institute of Medical Sciences, University of Toronto, Toronto*; **Pamina Laessing**, *Centre for Addiction and Mental Health, Toronto, Canada; Institute of Medical Sciences, University of Toronto, Toronto; Max Planck Institute for Biological Cybernetics, Tübingen, Germany*; **Clement Zai**, *Centre for Addiction and Mental Health, Toronto, Canada; Department of Psychiatry, University of Toronto, Toronto, Canada; Institute of Medical Sciences, University of Toronto, Toronto*; **James Kennedy**, *Centre for Addiction and Mental Health, Toronto, Canada; Department of Psychiatry, University of Toronto, Toronto, Canada; Institute of Medical Sciences, University of Toronto, Toronto*; **Povilas Karvelis**, *Centre for Addiction and Mental Health, Toronto, Canada*; **Peter Dayan**, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany; University of Tübingen, Tübingen, Germany*

Suicide remains a public health concern, demanding mechanistic insights to improve early detection and personalized interventions. Building on an active inference framework, we formalize how hopelessness interacts with Pavlovian biases to drive

maladaptive approach and avoidance strategies in suicidal individuals. Our model proposes four computational perturbations that heighten suicide risk: increased learning from aversive outcomes, reduced belief decay following unexpected events, heightened stress sensitivity, and decreased controllability of stressors. Drawing on neurobiological evidence of interactions between noradrenergic and cholinergic systems, we relate these perturbations to brain systems governing aversive learning and decision-making. We validate this framework using an Avoid/Escape Go/No-go paradigm in two clinical cohorts: 129 veterans with post-traumatic stress disorder subdivided into suicidal and non-suicidal groups, and 50 individuals with major depression exhibiting varying suicide risk levels. Hierarchical Bayesian analyses identified a Reinforcement Learning model with stable Pavlovian context biases and a forgetting factor as the best explanation for choice behavior at the population level, although an active inference model captured individual behavior well. Correlation analyses revealed substantial overlap between parameters, indicating that aversive sensitivity, go biases, and forgetting map onto prior preferences, action selection precision, and belief decay thresholds. Post-hoc subgrouping uncovered distinct suicidality subtypes - one marked by impulsive, stress-driven lose-switch tendencies and another by more planful, yet maladaptive, learning linked to increased hopelessness. Taken together, these results indicate stable Pavlovian biases in aversive contexts, amplified by recency effects, entrench patterns in suicidal groups. Moreover, active inference frameworks via prior preferences complement reinforcement approaches to refine understanding of suicidality.

Meet the Boards: Exchange Forum with the Boards of the Professional Societies (12:00 – 13:00)

Lunch Break (12:00 – 13:00)

Poster Session A with Coffee Break (13:00 – 14:30)

A 1 - Stage 2 Registered Report: Mental Imagery is Not Necessary for Successful Imaginal Extinction (13:00 – 14:30)

Merlin Monzel, *University of Bonn, Germany*; **Thomas Agren**, *Uppsala University, Uppsala, Sweden*; **Matthias Tengler**, *University of Bonn, Germany*; **Jana Karneboge**, *University of Bonn, Germany*; **Martin Reuter**, *University of Bonn, Germany*

A 2 - Metacontrol and Emotion: Higher Task-relevance in Negative Emotional State Reduces Aperiodic Brain Activity (13:00 – 14:30)

Jing Fan, *Shandong Normal University, China, People's Republic of*; **Xiaolei Xu**, *Shandong Normal University, China, People's Republic of*; **Lorenza Colzato**, *Shandong Normal University, China, People's Republic of*; **Bernhard Hommel**, *Shandong Normal University, China, People's Republic of*

A 3 - Beyond Words: Examining the Role of Mental Imagery for the Stroop Effect by Contrasting Aphantasics and Controls (13:00 – 14:30)

Merlin Monzel, *Department of Psychology, Personality Psychology and Biological Psychology, University of Bonn; Kaiser-Karl-Ring 9, 53111 Bonn, Germany*; **Janik Rademacher**, *Department of Psychology, Personality Psychology and Biological Psychology, University of Bonn; Kaiser-Karl-Ring 9, 53111 Bonn, Germany*; **Raquel Krempel**, *Center for Natural and Human Sciences, Federal University of ABC; Alameda da Universidade, s/no, CEP: 09606-045, Sao Bernardo do Campo - SP, Brazil*; **Martin Reuter**, *Department of Psychology, Personality Psychology and Biological Psychology, University of Bonn; Kaiser-Karl-Ring 9, 53111 Bonn, Germany*

A 4 - Two-Step Process in Action Representations of Prevention and Active Avoidance (13:00 – 14:30)

Solveig Tonn, *Trier University, Germany*; **Moritz Schaaf**, *University of Wuerzburg*; **Wilfried Kunde**, *University of Wuerzburg*; **Roland Pfister**, *Trier University, Germany*

A 5 - The Impact of Auricular Transcutaneous Vagus Nerve Stimulation on Metacontrol: Evidence from Aperiodic Activity Analyses (13:00 – 14:30)

Qinfei Zhang, *School of Psychology, Shandong Normal University, Jinan, China*; **Yu Pi**, *School of Psychology, Shandong Normal University, Jinan, China*; **Shuhui Lyu**, *School of Psychology, Shandong Normal University, Jinan, China*; **Christian Beste**, *School of Psychology, Shandong Normal University, Jinan, China; Cognitive Neurophysiology, Department of Child and Adolescent Psychiatry, Faculty of Medicine, TU Dresden, Dresden, Germany*; **Lorenza Colzato**, *School of Psychology, Shandong Normal University, Jinan, China*; **Bernhard Hommel**, *School of Psychology, Shandong Normal University, Jinan, China*

A 6 - Neural Correlates of Social Affect and Social Cognition as Risk Markers of Bipolar Disorder (13:00 – 14:30)

Dahna Choi, *Technische Universität Dresden, Germany*; **Katharina Förster**, *Technische Universität Dresden, Germany*; **Malin Katharina Hildebrandt**, *Technische Universität Dresden, Germany*; **Lara Zoë Maliske**, *Technische Universität Dresden, Germany*; **Konrad Lehmann**, *Technische Universität Dresden, Germany*; **Philipp Kanske**, *Technische Universität Dresden, Germany; Department of Psychology, Faculty of Psychology and Educational Sciences, Babes-Bolyai University, Cluj- Napoca, Romania*; **Emanuel Jauk**, *Department of Medical Psychology, Psychosomatics, and Psychotherapy, Medical University of Graz, Austria*

A 7 - Learning to Control Ones FOOOF Exponent: Modulating Aperiodic Neural Activity through Neurofeedback (13:00 – 14:30)

Yaru Zhang, *Shandong Normal University, China, People's Republic of*; **Lorenza Colzato**, *Shandong Normal University, China, People's Republic of*; **Bernhard Hommel**, *Shandong Normal University, China, People's Republic of*

A 8 - To Synchronise or Not to Synchronise? Investigating Physiological Synchrony in Emotional Performances (13:00 – 14:30)

Roydon David Goldsack, *Victoria University of Wellington, New Zealand*; **Hedwig Eisenbarth**, *Victoria University of Wellington, New Zealand*; **Nicola Hyland**, *Victoria University of Wellington, New Zealand*

A 9 - Feel What You Read: Empathic Fantasy Differentially Affects the Processing and Representation of Emotion-label, Emotion-laden and Neutral Abstract Words (13:00 – 14:30)

Miriam Rademacher, *Heinrich Heine University Düsseldorf, Germany*; **Marta Ghio**, *Heinrich Heine University Düsseldorf, Germany*; **Laura Bechtold**, *Heinrich Heine University Düsseldorf, Germany*

A 10 - The Relationship Between Brain Structural Correlates of Hypomanic Personality and Everyday Life Affect Lability (13:00 – 14:30)

Sophie Gosch, *Technische Universität Dresden, Germany*; **Emanuel Jauk**, *Technische Universität Dresden, Germany; Medical University of Graz, Austria*; **Konrad Lehmann**, *Technische Universität Dresden, Germany*; **Lara Maliske**, *Technische Universität Dresden, Germany*; **Philipp Kanske**, *Technische Universität Dresden, Germany*; **Katharina Förster**, *Technische Universität Dresden, Germany*

A 11 - Long-Term Home Use of a Tactile P3-Based Brain-Computer Interface by a Patient with the Locked-In Syndrome due to Amyotrophic Lateral Sclerosis (13:00 – 14:30)

Philipp Ziebell, *University of Würzburg, Germany*; **Maria Pfeiffer**, *University of Würzburg, Germany*; **Claudia Tröger**, *Technical University of Nürnberg, Germany*; **Wolfgang Tröger**, *Technical University of Nürnberg, Germany*; **Sebastian Halder**, *University of Essex, UK*; **Martin Winterholler**, *University of Erlangen-Nürnberg, Germany*; **Thomas Giesler**, *Technical University of Nürnberg, Germany*; **Andrea Kübler**, *University of Würzburg, Germany*; **Matthias Eidel**, *University of Würzburg, Germany*

A 12 - Test-Retest-Reliability of the Late Positive Potential During Positive Emotion Regulation Across Two Months (13:00 – 14:30)

Alexander H. J. Sahm, *Universität Konstanz, Germany*; **Roman Osinsky**, *Universität Osnabrück, Germany*; **Stephanie N. L. Schmidt**, *Universität Konstanz, Germany*; **Daniela Mier**, *Universität Konstanz, Germany*

A 13 - I, You, Robot: Attenuation for Auditory Outcomes of Actions Performed by Different Agents Shows Distinct Patterns for N1 and P2 Amplitudes (13:00 – 14:30)

Sophie Egan, *Heinrich Heine Universität, Germany*; **Constanze Weber**, *Heinrich Heine Universität, Germany*; **Marta Ghio**, *Heinrich Heine Universität, Germany*; **Christian Bellebaum**, *Heinrich Heine Universität, Germany*

A 14 - Electronic Laboratory Note Books in (Neuro-)Psychological Research Environments (13:00 – 14:30)

Sven Paßmann, *Computer- und Medienservice, Humboldt-Universität zu Berlin, Germany*; **Fadwa Alshawaf**, *Computer- und Medienservice, Humboldt-Universität zu Berlin, Germany*

A 15 - Seeing Danger Instead of Opportunity: Does Powerlessness Enhance Stimulus-Driven Attention Allocation Towards Threat-Related Stimuli? (13:00 – 14:30)

Robin Willardt, *UNSW Sydney, Australia*; **Mario Reutter**, *Julius-Maximilians-Universität Würzburg*

A 16 - Hippocampal Functional Connectivity to Regions of Interest Within the Prefrontal Cortex and Cognitive Flexibility (13:00 – 14:30)

Johanna R. Heckmann, *Juniorprofessorship of Neuroscience, Faculty of Human Sciences, University of Wuerzburg, Germany; Department of Child and Adolescent Psychiatry, Psychotherapy and Psychosomatics, University Hospital and University Wuerzburg, Germany*; **Daria E. A. Jensen**, *Clinic of Cognitive Neurology, University Medical Center Leipzig and Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Kirsten Hilger**, *Department of Psychology, University of Wuerzburg, Germany*; **Andrea Reiter**, *Department of Child and Adolescent Psychiatry, Psychotherapy and Psychosomatics, University Hospital and University Wuerzburg, Germany; Department of Psychology, University of Wuerzburg, Germany*; **Lorenz Deserno**, *Department of Child and Adolescent Psychiatry, Psychotherapy and Psychosomatics, University Hospital and University Wuerzburg, Germany*; **Miriam C. Klein-Fluegge**, *Department of Experimental Psychology, University of Oxford, UK; Wellcome Centre for Integrative Neuroimaging (WIN, Centre for*

Functional MRI of the Brain (FMRIB, University of Oxford, UK; Department of Psychiatry, University of Oxford, UK; **Mona M. Garvert**, *Juniorprofessorship of Neuroscience, Faculty of Human Sciences, University of Wuerzburg, Germany*

A 17 - Avoidance of Threat and Safety Cues in Interoceptive Fear Conditioning (13:00 – 14:30)

Saskia Rita Leißner, *Philipps-Universität Marburg, Germany*; **Christoph Benke**, *Philipps-Universität Marburg, Germany*; **Christiane A. Melzig**, *Philipps-Universität Marburg, Germany*

A 18 - Recording Somatosensory Steady-State Evoked Potentials with the cEEGrid Compact EEG (13:00 – 14:30)

Jimmy Petit, *Univ. Lille, CNRS, Centrale Lille, UMR 9189 CRIStAL, F-59000 Lille, France*; **José Rouillard**, *Univ. Lille, CNRS, Centrale Lille, UMR 9189 CRIStAL, F-59000 Lille, France*; **François Cabestaing**, *Univ. Lille, CNRS, Centrale Lille, UMR 9189 CRIStAL, F-59000 Lille, France*; **Andrea Kübler**, *Institute of Psychology, Department of Psychology I, University of Würzburg, Würzburg, Germany*; **Matthias Eidel**, *Institute of Psychology, Department of Psychology I, University of Würzburg, Würzburg, Germany*

A 19 - The Neural Correlates of Personally Familiar Dog Faces (13:00 – 14:30)

Jakob Menkens, *Department for Biological Psychology and Cognitive Neuroscience, Institute of Psychology, Friedrich Schiller University Jena*; **Juliane Bräuer**, *Max Planck Institute of Geoanthropology, DogStudies; Department for General Psychology and Cognitive Neuroscience, Institute of Psychology, Friedrich Schiller University Jena*; **Gyula Kovács**, *Department for Biological Psychology and Cognitive Neuroscience, Institute of Psychology, Friedrich Schiller University Jena*

A 20 - Comparing Your "Happy" to my "Happy": How to Assess the Affective Space of an Individual (13:00 – 14:30)

Francisca Horn, *University of Regensburg, Germany*; **Hedwig Eisenbarth**, *Victoria University of Wellington, New Zealand*; **Ludwig Kreuzpointner**, *University of Regensburg, Germany*; **Brigitte M. Kudielka**, *University of Regensburg, Germany*; **Jens V. Schwarzbach**, *University of Regensburg, Germany*; **Stefan Wüst**, *University of Regensburg, Germany*

A 21 - Jumping to Predictions: Neural Correlates of Visual and Auditory Deprivation in a Predictive Model of Hurdling (13:00 – 14:30)

Sophie Siestrup, *University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, Münster, Germany*; **Viviana Villafane Barraza**, *University of Münster, Germany*; **Dennis Redlich**, *German Sport University Cologne, Germany*; **Alexandra Pizzera**, *German Sport University Cologne, Germany*; **Markus Raab**, *German Sport University Cologne, Germany*; **Ricarda I. Schubotz**, *University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, Münster, Germany*

A 22 - Influence of the Serotonin Transporter Gene Polymorphism 5-HTTLPR on Coping Strategies (13:00 – 14:30)

Annabel Vetterlein, *Department of Psychology, University of Bonn, Germany*; **Patricia Oetken**, *Department of Psychology, University of Bonn, Germany*; **Jana Karneboge**, *Department of Psychology, University of Bonn, Germany*; **Janik Rademacher**, *Department of Psychology, University of Bonn, Germany*; **Steffen Marth**, *Department of Psychology, University of Bonn, Germany*; **Theresa Beneke**, *Department of Psychology, University of Bonn, Germany*; **Anika Hülsmann**, *Department of Psychology, University of Bonn, Germany*; **Lina**

Hochstein, *Department of Psychology, University of Bonn, Germany*; **Marie Wöstmann**, *Department of Psychology, University of Bonn, Germany*; **Martin Reuter**, *Department of Psychology, University of Bonn, Germany*

A 23 - Heart to Heart: Emotional and Neutral Picture Viewing in Dyads (13:00 – 14:30)

Janine Wirkner, *University of Greifswald, Germany*; **Maike Hollandt**, *University of Greifswald, Germany*; **Heino Mohrmann**, *University of Greifswald, Germany*; **Nico Gerth**, *University of Greifswald, Germany*; **Malte Krüger-Redwanz**, *University of Greifswald, Germany*; **Zoe Wulff**, *University of Greifswald, Germany*; **Jan Richter**, *University of Hildesheim, Germany*

A 24 - Valence-dependent Inter-individual Differences in Model-based Control Across Compulsive-impulsive Symptom Dimensions (13:00 – 14:30)

Vanessa Scholz, *Universitätsklinikum Würzburg, Germany*; **Nitzan Shahar**, *School of Psychological Sciences, Tel-Aviv University, Israel; Sagol School of Neuroscience, Tel-Aviv University, Israel*; **Quentin Huys**, *Max Planck-University College London Centre for Computational Psychiatry and Ageing Research, University College London, London, United Kingdom; Division of Psychiatry, University College London, London, United Kingdom*; **Lorenz Deserno**, *Universitätsklinikum Würzburg, Germany; Department of Psychiatry and Psychotherapy, Technical University Dresden, Germany; Max Planck, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*

A 25 - Measuring Social Attention Online - Is Mouse-Tracking Comparable to Eye-Tracking? (13:00 – 14:30)

Linda Christine Maria Wilkin-Krug, *Julius-Maximilians-University Würzburg, Germany*; **Matthias Gamer**, *Julius-Maximilians-University Würzburg, Germany*; **Lea Katharina Hildebrand**, *Julius-Maximilians-University Würzburg, Germany*

A 26 - Detection and Discrimination of Spatial vs Temporal Visuomotor Incongruence (13:00 – 14:30)

Fanni Peters, *University of Greifswald, Germany*; **Jakub Limanowski**, *University of Greifswald, Germany*

A 27 - Increased Trait Impulsivity and Impaired Learning from Feedback in Abstinent Chronic Users of Methamphetamine, but Not in Chronic Abstinent Users of MDMA (13:00 – 14:30)

Ann-Kathrin Stock, *TU Dresden, Germany*; **David Cole**, *Zurich University, Switzerland*; **Antje Opitz**, *TU Dresden, Germany*; **Josua Zimmermann**, *Zurich University, Switzerland*; **Rebecca Coray**, *Zurich University, Switzerland*; **Anna Zachäi**, *TU Dresden, Germany*; **Markus Baumgartner**, *Zurich University, Switzerland*; **Andrea Steuer**, *Zurich University, Switzerland*; **Maximilian Pilhatsch**, *TU Dresden, Germany*; **Boris Quednow**, *Zurich University, Switzerland*; **Christian Beste**, *TU Dresden, Germany*

A 28 - You Make My Heart Beat Faster: Smelling the Romantic Partner's Odor Increases Psychological and Autonomic Stress Responses, but not Cortisol Release (13:00 – 14:30)

Franny B. Spengler*, *Albert-Ludwigs-University, Freiburg*; **Johannes T. Doerflinger***, *Albert-Ludwigs-University, Freiburg*; **Josephine A Noel**, *Albert-Ludwigs-University, Freiburg*; **Beate Ditzen**, *University Hospital*

Heidelberg; **Jessica Freiherr**, *Fraunhofer Institute for Process Engineering and Packaging IVV, Freising; Friedrich-Alexander-University Erlangen-Nürnberg*; **Markus Heinrichs**, *Albert-Ludwigs-University, Freiburg*

A 29 - Mapping Memory Activations Within the Limbic Putamen - A Coordinate-Based Meta-Analysis of Functional Neuroimaging Studies (13:00 – 14:30)

Jana Sophie Ludwig, *Universität Würzburg, Germany*; **Serena Cheenath**, *Rutgers University, NJ, USA*; **Cynthia Lando**, *Rutgers University, NJ, USA*; **Hrushikesh Patel**, *Rutgers University, NJ, USA*; **John Purcell**, *Rutgers University, NJ, USA*; **Natalie Schick**, *Rutgers University, NJ, USA*; **Anoushiravan Zahedi**, *Universität Münster, Germany*; **David Zald**, *Rutgers University, NJ, USA*

A 30 - Predicting Human Intelligence from Structural Brain Connectivity: A Systematic Evaluation of Different Predictive Modelling Frameworks (13:00 – 14:30)

Lina Mitkov, *Julius-Maximilians-Universität Würzburg, Germany*; **Joshua Faskowitz**, *Indiana University, Bloomington, IN, USA*; **Philippe Jawinski**, *Humboldt Universität zu Berlin, Germany*; **Sebastian Markett**, *Humboldt Universität zu Berlin, Germany*; **Kirsten Hilger**, *Julius-Maximilians-Universität Würzburg, Germany*

A 31 - Differential Effects of Social and Stress Odors on Facial Emotion Recognition (13:00 – 14:30)

Josephine Alexandra Noel*, *Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Freiburg, Germany*; **Franny B. Spengler***, *Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Freiburg, Germany*; **Jessica Freiherr**, *Sensory Analytics & Technologies, Fraunhofer Institute for Process Engineering and Packaging IVV, Freising, Germany; Department of Psychiatry and Psychotherapy, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany*; **Markus Heinrichs**, *Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Freiburg, Germany*

A 32 - DNA Methylation and Social Loss: An Epigenome-Wide Association Study (13:00 – 14:30)

Martin Stoffel, *Ruprecht-Karls University Heidelberg, Heidelberg, Germany; Institute of Medical Psychology, Center for Psychosocial Medicine, University Hospital Heidelberg; German Centre for Mental Health, partner site Heidelberg-Mannheim-Ulm, Germany; Health and Life Science Alliance Heidelberg Mannheim*; **Joshua Stevenson-Hoare**, *Health and Life Science Alliance Heidelberg Mannheim; Division of Clinical Epidemiology and Aging Research, German Cancer Research Center, Heidelberg, Germany*; **Ben Schöttker**, *Division of Clinical Epidemiology and Aging Research, German Cancer Research Center, Heidelberg, Germany; Network Aging Research, Heidelberg University, Heidelberg, Germany*; **Johanna Hammer**, *Institute of Medical Psychology, Center for Psychosocial Medicine, University Hospital Heidelberg*; **Hermann Brenner**, *Health and Life Science Alliance Heidelberg Mannheim; Division of Clinical Epidemiology and Aging Research, German Cancer Research Center, Heidelberg, Germany; Network Aging Research, Heidelberg University, Heidelberg, Germany*; **Beate Ditzen**, *Ruprecht-Karls University Heidelberg, Heidelberg, Germany; Institute of Medical Psychology, Center for Psychosocial Medicine, University Hospital Heidelberg; German Centre for Mental Health, partner site Heidelberg-Mannheim-Ulm, Germany; Health and Life Science Alliance Heidelberg Mannheim*

A 33 - Measuring Face Gaze from Videos - A Novel Method and First Findings (13:00 – 14:30)

Tobias Kleinert, *Laboratory of Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Germany*; **Sara Molteni**, *Laboratory of Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Germany*; **Markus Heinrichs**,

Laboratory of Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Germany; **Bastian Schiller**, *Laboratory of Biological Psychology, Clinical Psychology, and Psychotherapy, Department of Psychology, University of Freiburg, Germany; Laboratory of Clinical Neuropsychology, Department of Psychology, Heidelberg University, Germany*

A 34 - The Upside of Anxiety: Improved Spatial Navigation in High-trait Anxious Individuals Under Threat (13:00 – 14:30)

Florian Bublatzky, *Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Germany*; **Martin Riemer**, *Biological Psychology and Neuroergonomics, Technical University Berlin, Germany*; **Valentina Turturo**, *Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Germany*; **Kornelius Kammler-Sücker**, *Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Germany*

A 35 - Dissociating Neural Correlates of Awareness, Relevance and Decision-making in the Attentional Blink (13:00 – 14:30)

Torge Dellert, *University of Münster, Germany*; **Paula Temming**, *University of Münster, Germany*; **Miriam Pritz**, *University of Münster, Germany*; **Maximilian Bruchmann**, *University of Münster, Germany*; **Thomas Straube**, *University of Münster, Germany*

A 36 - Tend-and-Befriend Toward Peers, Fight-or-Flight Toward Stressors: A Dual Response to Stress (13:00 – 14:30)

Laura Oswald, *Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, Albert-Ludwigs-University of Freiburg, Stefan-Meier-Straße 8, 79104 Freiburg, Germany*; **Fabian Dvorak**, *Centre for the Advanced Study of Collective Behavior, University of Konstanz, Universitätsstraße 10, Konstanz, 78464, Germany.*; **Jeremy P. Jamieson**, *Department of Psychology, University of Rochester, 437 Meliora Hall, Rochester, NY, USA*; **Markus Heinrichs**, *Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, Albert-Ludwigs-University of Freiburg, Stefan-Meier-Straße 8, 79104 Freiburg, Germany*; **Bastian Schiller**, *Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, Albert-Ludwigs-University of Freiburg, Stefan-Meier-Straße 8, 79104 Freiburg, Germany*

A 37 - Neural Processing of Emotional Facial Expression in the Light of the Dark Tetrad: A Large Sample EEG Study (13:00 – 14:30)

Marina Palazova, *International Psychoanalytic University Berlin, Germany*; **Marie Mueckstein**, *International Psychoanalytic University Berlin, Germany*; **Birgit Stürmer**, *International Psychoanalytic University Berlin, Germany*

A 38 - Changing Motivation for Mental Effort with Striatum-targeted Inference Stimulation (13:00 – 14:30)

Gizem Vural, *Department for Psychology, Ludwig-Maximilians-Universität Munich, Munich, Germany; Department of Psychiatry and Psychotherapy, University Hospital LMU, Munich, Germany*; **Sarina Drexler**, *Department for Psychology, Ludwig-Maximilians-Universität Munich, Munich, Germany*; **Daniel Keeser**, *Department of Psychiatry and Psychotherapy, University Hospital LMU, Munich, Germany; NeuroImaging Core Unit Munich (NICUM, University Hospital LMU, Munich, Germany*; **Alexander Soutschek**, *Department for Psychology, Ludwig-Maximilians-Universität Munich, Munich, Germany*

A 39 - The Effect of Attention to Emotional Cues depending on Psychopathic Personality Traits (13:00 – 14:30)

Katarzyna Kuczaj, *Victoria University of Wellington, New Zealand*; **Hedwig Eisenbarth**, *Victoria University of Wellington, New Zealand*

A 40 - Heart Rate Variability in Adolescents with Obsessive-Compulsive Disorder (13:00 – 14:30)

Nora C. Vetter, *MSB Medical School Berlin Hochschule für Gesundheit und Medizin, Germany; Department of Child and Adolescent Psychiatry, Faculty of Medicine of the Technische Universität Dresden, Germany*; **Sophie Scheer**, *Department of Child and Adolescent Psychiatry, Faculty of Medicine of the Technische Universität Dresden, Germany*; **Lea L. Backhausen**, *Department of Child and Adolescent Psychiatry, Faculty of Medicine of the Technische Universität Dresden, Germany*; **Magdalena Wekenborg**, *Else Kroner Fresenius Center for Digital Health, Faculty of Medicine of the Technische Universität Dresden, Germany*; **Manuel Burkart**, *Department of Child and Adolescent Psychiatry, Faculty of Medicine of the Technische Universität Dresden, Germany*; **Nicole Beyer**, *Department of Child and Adolescent Psychiatry, Faculty of Medicine of the Technische Universität Dresden, Germany*; **Veit Roessner**, *Department of Child and Adolescent Psychiatry, Faculty of Medicine of the Technische Universität Dresden, Germany*

A 41 - Effects of Reappraisal and Rumination on Repeated Exposure to Stress (13:00 – 14:30)

Katja Langer, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum; Germany*; **Oliver T. Wolf**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum; Germany*; **Valerie L. Jentsch**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum; Germany*

A 42 - The Effects of Glucocorticoid and Noradrenergic Activation on Resource Allocation in Intergroup Conflicts (13:00 – 14:30)

Damon Dashti, *Comparative Psychology, Heinrich-Heine Universität Düsseldorf, Germany*; **Luca Marie Lüpken**, *Comparative Psychology, Heinrich-Heine Universität Düsseldorf, Germany*; **Mohammad Seidisarouei**, *Comparative Psychology, Heinrich-Heine Universität Düsseldorf, Germany*; **Paul Forbes**, *Comparative Psychology, Heinrich-Heine Universität Düsseldorf, Germany*; **Alfons Schnitzler**, *Institute of Clinical Neuroscience and Medical Psychology, University Hospital Düsseldorf*; **Tobias Kalenscher**, *Comparative Psychology, Heinrich-Heine Universität Düsseldorf, Germany*

A 43 - Hemispheric Asymmetries in the EEG: Is There an Association Between N1 Lateralization and Alpha Asymmetry? (13:00 – 14:30)

Petunia Reinke, *MSH Medical School Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg*; **Lisa Deneke**, *MSH Medical School Hamburg, Germany*; **Sebastian Ocklenburg**, *MSH Medical School Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg; Biopsychologie, Insitute of Cognitive Neuroscience, Faculty of Psychology, Ruhr Universität Bochum*

A 44 - Neural Correlates of Social Metacognition (13:00 – 14:30)

Rebekka S. Mattes, *Department of Psychology, Ludwig-Maximilans-Universität München, Munich, Germany; Graduate School of Systemic Neuroscience, Munich, Germany*; **Gizem Vural**, *Department of Psychology, Ludwig-Maximilans-Universität München, Munich, Germany; Department of Psychiatry and Psychotherapy, LMU University Hospital, Munich, Germany*; **Sarina Drexler**, *Department of Psychology, Ludwig-Maximilans-Universität München, Munich, Germany*; **Hongmei Xia**, *Department of Psychology, Ludwig-Maximilans-Universität München, Munich, Germany*; **Alexander Soutschek**, *Department of Psychology, Ludwig-Maximilans-Universität München, Munich, Germany; Graduate School of Systemic Neuroscience, Munich, Germany*

A 45 - Anatomo-Functional Brain Organization Across the Broad Spectrum of Cognition: The Multiple-Demand System as the Human Cognitive Core (13:00 – 14:30)

Daniel Faber, *Hannover Medical School, Department of Psychiatry, Germany; University of Cambridge, MRC Cognition and Brain Sciences Unit, United Kingdom*; **Gavin Shields**, *University of Cambridge, MRC Cognition and Brain Sciences Unit, United Kingdom*; **John Duncan**, *University of Cambridge, MRC Cognition and Brain Sciences Unit, United Kingdom; University of Oxford, Department of Experimental Psychology, United Kingdom*; **Moataz Assem**, *University of Cambridge, MRC Cognition and Brain Sciences Unit, United Kingdom*

A 46 - Decoding Voice Identity in Auditory Working Memory: an MEG Study (13:00 – 14:30)

Melek Öyküm Yalçın, *Institute of Medical Psychology, Medical Faculty, Goethe University, Frankfurt am Main 60528, Germany; Cooperative Brain Imaging Center, Medical Faculty, Goethe University, Frankfurt am Main, 60528, Germany*; **Cora Fischer**, *Institute of Medical Psychology, Medical Faculty, Goethe University, Frankfurt am Main 60528, Germany; Cooperative Brain Imaging Center, Medical Faculty, Goethe University, Frankfurt am Main, 60528, Germany*; **Philipp Deutsch**, *Institute of Medical Psychology, Medical Faculty, Goethe University, Frankfurt am Main 60528, Germany; Cooperative Brain Imaging Center, Medical Faculty, Goethe University, Frankfurt am Main, 60528, Germany*; **Pascal Belin**, *Aix-Marseille Universite, CNRS, INT, Institut de Neurosciences de la Timone, Faculty of Medicine, 27, Boulevard Jean Moulin, Marseille, 13005, France*; **Christoph Bledowski**, *Institute of Medical Psychology, Medical Faculty, Goethe University, Frankfurt am Main 60528, Germany; Cooperative Brain Imaging Center, Medical Faculty, Goethe University, Frankfurt am Main, 60528, Germany*; **Jochen Kaiser**, *Institute of Medical Psychology, Medical Faculty, Goethe University, Frankfurt am Main 60528, Germany; Cooperative Brain Imaging Center, Medical Faculty, Goethe University, Frankfurt am Main, 60528, Germany*

A 47 - Psychometric Network Analysis of Changes in Connectivity of Cognitive Functions Following Cognitive Training in Individuals with Mild Cognitive Impairment (13:00 – 14:30)

Daniel Scharfenberg, *Medical Psychology | Neuropsychology and Gender Studies, Center for Neuropsychological Diagnostics and Intervention (CeNDI, Faculty of Medicine and University Hospital of Cologne, University of Cologne, Cologne, Germany*; **Elke Kalbe**, *Medical Psychology | Neuropsychology and Gender Studies, Center for Neuropsychological Diagnostics and Intervention (CeNDI, Faculty of Medicine and University Hospital of Cologne, University of Cologne, Cologne, Germany*; **Drin Ferizaj**, *Department of Geriatrics and Medical Gerontology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Luis Perotti**, *Department of Geriatrics and Medical Gerontology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Oskar Stamm**, *Department of Geriatrics and Medical Gerontology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Eva Maria Martin**, *Department of Neurology, Jena University Hospital, Jena, Germany*; **Sophia Rekers**, *Department of Neurology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Tobias Oelgeschläger**, *Department of Neurology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Katharina Barcatta**, *Centre Hospitalier Neuro-Psychiatrique Luxembourg (CHNP, Zentrum für Psychotherapie, Ettelbruck, Luxembourg*; **Sigrid Seiler**, *Neuropsychological University Outpatient Clinic of the LMU Munich, Munich, Germany*; **Madita Hörster**, *Neuropsychological University Outpatient Clinic of the LMU Munich, Munich, Germany*; **Tilo Strobach**, *Department of Psychology, ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Hamburg, Germany*; **Johanna Funk**, *Neuropsychological University Outpatient Clinic of the LMU Munich, Munich, Germany*; **Charles Benoy**, *Centre Hospitalier Neuro-Psychiatrique Luxembourg (CHNP, Zentrum für Psychotherapie, Ettelbruck, Luxembourg*; **Carsten Finke**, *Department of Neurology, Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Kathrin Finke**, *Department of Neurology, Jena University Hospital, Jena, Germany*; **Özgür Onur**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Anja Ophey**, *Medical Psychology | Neuropsychology and Gender Studies, Center for Neuropsychological Diagnostics and Intervention (CeNDI, Faculty of Medicine and University Hospital of Cologne, University of Cologne, Cologne, Germany*

A 48 - How Social Information Shapes Pain Perception - Impact and Cross-Modal Transfer (13:00 – 14:30)

Isabel Neumann, *Julius-Maximilians-Universität Würzburg, Germany*; **Madita Schindler**, *Julius-Maximilians-Universität Würzburg, Germany*; **Matthias Gamer**, *Julius-Maximilians-Universität Würzburg, Germany*

A 49 - Causal Role of the Dorsolateral Prefrontal Cortex (DLPFC) in Mental Effort and its Neurometabolic Underpinnings (13:00 – 14:30)

Hongmei Xia*, *Department for Psychology, Ludwig-Maximilians-Universität München, Munich, Germany*; **Gizem Vural***, *Department for Psychology, Ludwig-Maximilians-Universität München, Munich, Germany*; **Antonia Šušnjar**, *Harvard Medical School, Boston, Massachusetts, USA; Biomedical Imaging, Massachusetts General Hospital, Boston, Massachusetts, USA*; **Hao Yu**, *Department for Psychology, Ludwig-Maximilians-Universität München, Munich, Germany*; **Rebekka S. Mattes**, *Department for Psychology, Ludwig-Maximilians-Universität München, Munich, Germany*; **Alexander Soutschek**, *Department for Psychology, Ludwig-Maximilians-Universität München, Munich, Germany*

A 50 - Neural Oscillations During Continuous Target Tracking Under Varying Visuomotor Conflict (13:00 – 14:30)

Josephine Gräfe, *Universität Greifswald, Germany*; **Peng Wang**, *Universität Greifswald, Germany*; **Jakub Limanowski**, *Universität Greifswald, Germany*

A 51 - The Frontal Midline Theta Inhibition Dilemma of Neurofeedback (13:00 – 14:30)

Maria Pfeiffer, *Julius-Maximilians-Universität Würzburg, Germany*; **Loic Botrel**, *Julius-Maximilians-Universität Würzburg, Germany*; **Sonja Kleih-Dahms**, *Julius-Maximilians-Universität Würzburg, Germany*; **Andrea Kübler**, *Julius-Maximilians-Universität Würzburg, Germany*

A 52 - A Brain-based Signature for Pain and Pain Relief (13:00 – 14:30)

Jialin Li, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany; Max Planck School of Cognition, Stephanstrasse 1a, 04103 Leipzig, Germany*; **Balint Kincses**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*; **Katharina Schmidt**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*; **Katarina Forkmann**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*; **Frederik Schlitt**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*; **Jaspreet Kaur**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*; **Ulrike Bingel**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*; **Tamas Spisak**, *Department of Neurology, Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, University Duisburg-Essen, Hufelandstr. 55, 45147 Essen, Germany*

A 53 - Real-time fMRI Neurofeedback to Investigate the Role of Neural Stress Regulation in Problematic Alcohol Use (13:00 – 14:30)

Nina Kempf, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany; German Center for Mental Health (Partner Site Mannheim Heidelberg Ulm, Mannheim, Germany*; **Lea Wazulin**, *Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany; German Center for Mental Health (Partner Site Mannheim Heidelberg Ulm, Mannheim, Germany*; **Falk Kiefer**, *Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany*; **Peter Kirsch**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany; German Center for Mental Health (Partner Site Mannheim Heidelberg Ulm, Mannheim, Germany*; **Martin F. Gerchen**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany; German Center for Mental Health (Partner Site Mannheim Heidelberg Ulm, Mannheim, Germany*

A 54 - Neural Correlates of Individual Stress Responses and Problematic Alcohol Use (13:00 – 14:30)

Lea Wazulin, *Department of Addictive Behavior and Addiction Medicine, Central Institute of Mental Health , Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; German Centre for Mental Health (DZPG*; **Nina Kempf**, *Department for Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany; German Centre for Mental Health (DZPG*; **Patrick Bach**, *Department of Addictive Behavior and Addiction Medicine, Central Institute of Mental Health , Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; German Centre for Mental Health (DZPG*; **Peter Kirsch**, *Department for Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany*; **Falk Kiefer**, *Department of Addictive Behavior and Addiction Medicine, Central Institute of Mental Health , Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Martin Gerchen**, *Department for Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; Institute of Psychology, University of Heidelberg, Germany; German Centre for Mental Health (DZPG*

A 55 - Does Targeted Memory Reactivation During Slow-Wave Sleep Reduces Fear Generalization? (13:00 – 14:30)

Weiwei Li, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Julia Beitner**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Gordon B. Feld**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychology, Ruprecht Karl University of Heidelberg, Heidelberg, Germany*

A 56 - EEG Markers of Preparing Deceptive Responses to Autobiographical Questions (13:00 – 14:30)

Emely Voltz, *University of Bonn, Germany*; **Jonas Schmuck**, *University of Bonn, Germany*; **Robert Schnuerch**, *University of Bonn, Germany*; **Henning Gibbons**, *University of Bonn, Germany*

A 57 - Recent Advances in Stress Induction: Exploring Online-, Virtual-Reality-, and Smartphone-Based TSST Variants - Potentials and Limitations (13:00 – 14:30)

Lena Sophie Pfeifer, *Ruhr University Bochum, Germany*

A 58 - Imagined Self-Related Feedback Elicits Positively Biased Processing (13:00 – 14:30)

Xiong Hu, *Section Social Neuroscience, Department of General Psychiatry, Center for Psychosocial Medicine, Heidelberg University, Germany*; **Josue Garcia-arch**, *Department of Cognition, Development and Education Psychology, Faculty of Psychology, University of Barcelona, Spain; Institute of Neuroscience (UBNeuro, University of Barcelona, Spain.*; **Christoph W. Korn**, *Section Social Neuroscience, Department of General Psychiatry, Center for Psychosocial Medicine, Heidelberg University, Germany*

A 59 - Changes in Functional Connectivity in Depressive Patients Undergoing ECT (13:00 – 14:30)

Lorenz Kick, *University of Regensburg, Germany; University Hospital Regensburg, Germany*

A 60 - Weaker Brain Functional Connectivity Is Associated with Worse Pain Modulation in Aging (13:00 – 14:30)

Marian Van Der Meulen, *University of Luxembourg, Luxembourg*; **Katharina Rischer**, *University of Luxembourg, Luxembourg*; **Ana Maria Gonzalez Roldan**, *University of Luxembourg, Luxembourg*; **Juan Lorenzo Terrasa**, *University of Luxembourg, Luxembourg*; **Pedro Montoya**, *University of Luxembourg, Luxembourg*; **Fernand Anton**, *University of Luxembourg, Luxembourg*

A 61 - Omitted Sound Responses Reveal Influences of Voluntary Attention on Prediction Error Processing (13:00 – 14:30)

Tjerk Dercksen, *Leibniz Institute for Neurobiology, Germany*; **Andreas Widmann**, *Leipzig University, Germany*; **Nicole Wetzel**, *Leibniz Institute for Neurobiology, Germany*

A 62 - Introducing a Novel Foraging Paradigm to Examine Neural Correlates of Exploration and Exploitation (13:00 – 14:30)

Luisa Balzus, *Department of Medicine, MSB Medical School Berlin, Berlin, Germany*; **Christian Marji**, *Department of Medicine, MSB Medical School Berlin, Berlin, Germany*; **Max Happel**, *Department of Medicine, MSB Medical School Berlin, Berlin, Germany*; **Julia Klawohn**, *Department of Medicine, MSB Medical School Berlin, Berlin, Germany*

A 63 - Effects of Cognitive Load and Directed Forgetting on Pavlovian-To-Instrumental Transfer. (13:00 – 14:30)

Ulkar Huseynzade, *Universität Würzburg, Germany*; **Andreas Eder**, *Universität Würzburg, Germany*

A 64 - The Role of Oxytocin in Approach-Avoidance Behavior in High vs. Low Social Anxiety (13:00 – 14:30)

Emily Zoe Burlon, *Julius Maximilians Universität, Germany*; **Katja Bertsch**, *Julius Maximilians Universität, Germany*; **Matthias Gamer**, *Julius Maximilians Universität, Germany*

A 65 - Study Protocol: The Role of Goal-Directed and Habitual Behaviors and Their Neurobiological Underpinnings in the Comorbidity of Social Anxiety and Substance Use Disorders (13:00 – 14:30)

Tu Hong, *Department of Clinical Psychology, Central Institute of Mental Health and Psychological Institute, University of Heidelberg*; **Mathieu Pinger**, *Department of Clinical Psychology, Central Institute of Mental Health and Psychological Institute, University of Heidelberg*; **Peter Kirsch**, *Department of Clinical Psychology, Central Institute of Mental Health and Psychological Institute, University of Heidelberg*

A 66 - Risk on the Brain: A Comparative fMRI Study of Schizophrenia, Alcohol Use Disorder, and Healthy Controls Using the Balloon Task (13:00 – 14:30)

Stephanie Schmidt, *Universität Konstanz, Germany*; **Alexander Wolber**, *Universität Konstanz, Germany*; **Brigitte Rockstroh**, *Universität Konstanz, Germany*; **Daniela Mier**, *Universität Konstanz, Germany*

A 67 - ManyBeds: An International Collaboration Evaluating the Replicability of Auditory Targeted Memory Reactivation (13:00 – 14:30)

Julia Beitner, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Gordon B. Feld**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychology, Ruprecht Karl University of Heidelberg, Heidelberg, Germany*

A 68 - Facet- and Domain-specific Interoception: Different Measures of Cardiac Interoceptive Accuracy Positively Correlate but Show no Relationship with Indicators of Respiratory Interoceptive Accuracy or Heartbeat-evoked Potentials. (13:00 – 14:30)

Anxhela Sulaj, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Nina Buntic**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Sam Bernard**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Mareike Boos**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Lisa De Cillia**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Laurie Henkes**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Tobias Prinz**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Tabea Eimer**, *Research Group Health Psychology, Department of Behaviour, Health and Psychopathology, KU Leuven, Leuven, Belgium*; **Livia Guadagnoli**, *Laboratory for BrainGut Axis Studies, Department of Chronic Diseases and Metabolism, KU Leuven, Leuven, Belgium*; **Maaike Van Den Houte**, *Laboratory for BrainGut Axis Studies, Department of Chronic Diseases and Metabolism, KU Leuven, Leuven, Belgium*; **Lukas Van Oudenhove**, *Laboratory for BrainGut Axis Studies, Department of Chronic Diseases and Metabolism, KU Leuven, Leuven, Belgium*; **Andreas Von Leupoldt**, *Research Group Health Psychology, Department of Behaviour, Health and Psychopathology, KU Leuven, Leuven, Belgium*; **Claus Vögele**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Nathalie Weltens**, *Laboratory for BrainGut Axis Studies, Department of Chronic Diseases and Metabolism, KU Leuven, Leuven, Belgium*; **André Schulz**, *Research Group Brain-Body Interaction, Clinical Psychophysiology Laboratory (CLIPSLAB, Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*

A 69 - More Than Meets the Eye: Neural Correlates of Conscious Perception in the Sound-Induced Flash Illusion (13:00 – 14:30)

Theresa Rieger, *Institute of Medical Psychology and Systems Neuroscience, University of Muenster; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Muenster*; **Josefine Feuerstein**, *Institute of Medical Psychology and Systems Neuroscience, University of Muenster*; **Thomas Straube**, *Institute of Medical Psychology and Systems Neuroscience, University of Muenster; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Muenster*; **Maximilian Bruchmann**, *Institute of Medical Psychology and Systems Neuroscience, University of Muenster; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Muenster*

A 70 - Investigating Spatial and Temporal Properties of Human Sleep Spindles Using MEG and EEG (13:00 – 14:30)

Tobias Haase, *University of Tübingen, Germany*; **Lea Himmer**, *University of Tübingen, Germany*; **Monika Schönauer**, *University of Freiburg*; **Christoph Braun**, *University of Tübingen, Germany*; **Steffen Gais**, *University of Tübingen, Germany*

A 71 - Differential Associations of Dopamine D1 Receptor Density and Age with Neural Correlates of Working Memory (13:00 – 14:30)

Katharina Maria Roscher, *Universität der Bundeswehr München, Germany*; **Alireza Salami**, *Umea Center for Functional Brain Imaging (UFBI*; **Anna Rieckmann**, *Universität der Bundeswehr München, Germany*

A 72 - Sprach-Synchronizität während sozialer Interaktion (13:00 – 14:30)

Julia Schräder, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen, Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*; **Julia Koch**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen, Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*; **Maria Bruggaier**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen, Aachen, Germany*; **Nele Ahrens**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen, Aachen, Germany*; **Heide Läuter**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen, Aachen, Germany*; **Alexandra König**, *ki:elements GmbH, Bleichstr. 27, 66111 Saarbrücken, Germany*; **Felix Menne**, *ki:elements GmbH, Bleichstr. 27, 66111 Saarbrücken, Germany*; **Lisa Wagels**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen, Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*

A 73 - Parsing Shared and Unique Variance of Irritability, Inattention, Hyperactivity and Anxiety (13:00 – 14:30)

Miriam Beneke, *Albert-Ludwigs University of Freiburg, Germany*; **Grace Stohr**, *Emotion and Development Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland*; **Melissa A. Brotman**, *Emotion and Development Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland*; **Daniel S. Pine**, *Emotion and Development Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland*; **Ellen Leibenluft**, *Emotion and Development Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland*; **Julia O. Linke**, *Albert-Ludwigs University of Freiburg, Germany*

A 74 - Integrating Reinforcement Learning and Choice Frequency to Investigate Habitual Behavior (13:00 – 14:30)

Hugo Fluhr, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland*; **Timokhov Viktor**, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland*; **Philippe N. Tobler**, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland*; **Stephan Nebe**, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland*

A 75 - Oscillatory Activity of Schizophrenia Patients During Motion Perception (13:00 – 14:30)

Canan Basar-Eroglu, *Izmir University of Economics, Turkiye*; **Linda Rurup**, *University of Bremen, Germany*; **Kubra Altuntas**, *Izmir University of Economics, Turkiye*; **Christina Schmiedt-Fehr**, *University of Bremen, Germany*

A 76 - The Influence of Social Self-Categorisation on the Construction and Retrieval of Cognitive Maps (13:00 – 14:30)

Luca Franziska Kaiser, *Universitätsklinikum Würzburg, Germany*; **Mona Garvert**, *Julius-Maximilians-University, Würzburg*; **Grit Hein**, *Universitätsklinikum Würzburg, Germany*

A 77 - The Microstates of Shame (13:00 – 14:30)

Franziska Martin, *Ruhr University Bochum, Germany*; **Clara Sophie Beer**, *Ruhr University Bochum, Germany*; **Martin Holtmann**, *Ruhr University Bochum, Germany*; **Tanja Legenbauer**, *Ruhr University Bochum, Germany*

A 78 - Through the Eyes of OCD: An Eye-Tracking Study on Attentional Biases Toward Personally Relevant Stimuli (13:00 – 14:30)

Celina L. Müller, *LMU Munich, Department of Psychology, Germany; University of Würzburg, Department of Psychology, Germany*; **Thomas Ehring**, *LMU Munich, Department of Psychology, Germany*; **Andreas Kustermann**, *Oberberg Hospital Windach, Germany*; **Alica Walter**, *Oberberg Hospital Windach, Germany*; **Götz Berberich**, *Oberberg Hospital Windach, Germany*; **Michael Noll-Hussong**, *Oberberg Day Clinic Munich-Westend, Germany*; **Benedikt V. Ehinger**, *University of Stuttgart, Stuttgart Center for Simulation Science Institute for Visualization and Interactive Systems, Germany*; **Barbara Cludius**, *LMU Munich, Department of Psychology, Germany; University of Bremen, Department of Psychology, Germany*

A 79 - How Monetary Reward Counteracts the Avoidance of Pain: Evidence from an Ultra-High Field Neuroimaging Study (13:00 – 14:30)

Jasper Amadeus Bischofberger, *Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Istvan Homolya**, *Comprehensive Heart Failure Center, University Hospital Würzburg, Würzburg, Germany*; **Anna Linda Leutritz**, *Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Ebru Ecem Tavacioglu**, *Department of Psychology I, University of Würzburg, Würzburg, Germany*; **Martin J. Herrmann**, *Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Maxim Terekhov**, *Comprehensive Heart Failure Center, University Hospital Würzburg, Würzburg, Germany*; **Philip Tovote**, *Institute of Clinical Neurobiology, University Hospital Würzburg, Würzburg, Germany*; **Matthias Gamer**, *Department of Psychology I, University of Würzburg, Würzburg, Germany*; **Grit Hein**, *Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*

A 80 - The Neural Dynamics of Agency and Motivation: An EEG Study of Feedback Inconsistency in a Cued Colour-Discrimination Task (13:00 – 14:30)

Luisa Alessia Grote, *Leibniz-Institut für Arbeitsforschung, Germany*; **Daniel Schneider**, *Leibniz-Institut für Arbeitsforschung, Germany*; **Edmund Wascher**, *Leibniz-Institut für Arbeitsforschung, Germany*; **Stefan Arnau**, *Leibniz-Institut für Arbeitsforschung, Germany*

A 81 - Dopamine Effects on Explore-Exploit Behaviour: The Role of Interindividual Differences (13:00 – 14:30)

Elke Smith, *Department of Psychology, Biological Psychology, University of Cologne, Cologne, Germany*; **Hendrik Theis**, *Department of Nuclear Medicine, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany; Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Thilo Van Eimeren**, *Department of Nuclear Medicine, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany; Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Kilian H. K. Knauth**, *Department of Psychology, Biological Psychology, University of Cologne, Cologne, Germany*; **Deniz Tuzsus**, *Department of Psychology, Biological Psychology, University of Cologne, Cologne, Germany*; **David Mathar**, *Department of Psychology, Biological Psychology, University of Cologne, Cologne, Germany*; **Jan Peters**, *Department of Psychology, Biological Psychology, University of Cologne, Cologne, Germany*

A 82 - Cognitive Inhibition in Autistic Adults: Prefrontal Hemodynamic Activity in a Virtual Reality-Based Response Control Task (13:00 – 14:30)

Anna Vorreuther, *Applied Neurocognitive Systems, Institute of Human Factors and Technology Management IAT, University of Stuttgart, Germany*; **Nektaria Tagalidou**, *Applied Neurocognitive Systems, Institute of Human Factors and Technology Management IAT, University of Stuttgart, Germany*; **Katharina Lingelbach**, *Applied Neurocognitive Systems, Fraunhofer Institute for Industrial Engineering IAO, Stuttgart, Germany; Applied Neurocognitive Psychology, Carl von Ossietzky University, Oldenburg, Germany*; **Mathias Vukelic**, *Applied Neurocognitive Systems, Fraunhofer Institute for Industrial Engineering IAO, Stuttgart, Germany*

A 83 - Neural Correlates of Social Reward Anticipation: A Multimodal Investigation of the Striatum (13:00 – 14:30)

David Weigner, *Institute of Neuroscience and Biopsychology for Clinical Application, Medical School Berlin, Berlin, Germany; Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany*; **Marvin Sören Meiering**, *Institute of Neuroscience and Biopsychology for Clinical Application, Medical School Berlin, Berlin, Germany; Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany*; **Simone Grimm**, *Institute of Neuroscience and Biopsychology for Clinical Application, Medical School Berlin, Berlin, Germany; Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany; Department of Psychiatry and Psychotherapy, Charité, Universitätsmedizin Berlin, Corporate Member of Freie Universität Berlin and Humboldt-Universität Zu Berlin, Berlin, Germany; Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital of Psychiatry, University of Zurich, Zurich, Switzerland*; **Sören Enge**, *Institute of Neuroscience and Biopsychology for Clinical Application, Medical School Berlin, Berlin, Germany*

A 84 - The Sustained Potential Can be Modulated by Auditory Regularities but is Also Susceptible to Attention (13:00 – 14:30)

Nina Coy, *Chemnitz University of Technology, Germany*; **Erich Schröger**, *Leipzig University, Germany*; **Sabine Grimm**, *Chemnitz University of Technology, Germany*

A 85 - Dynamic Coactivation Patterns during Repetitive Negative Thinking: a cross-sectional fMRI study (13:00 – 14:30)

Marvin Meiering, *Medical School Berlin, Germany; Freie Universität Berlin, Germany*; **Emily Belleau**, *McLean Hospital, Belmont, MA, USA; Harvard Medical School, Cambridge, MA, USA*; **David Weigner**, *Medical School Berlin, Germany; Freie Universität Berlin, Germany*; **Rebecca Gruzman**, *Medical School Berlin, Germany; Freie*

Universität Berlin, Germany; **Diego Pizzagalli**, *McLean Hospital, Belmont, MA, USA; Harvard Medical School, Cambridge, MA, USA*; **Sören Enge**, *Medical School Berlin, Germany*; **Simone Grimm**, *Medical School Berlin, Germany; Charité - Universitätsmedizin Berlin, Germany; Universität Zurich, Switzerland*

A 86 - Timing Matters: Effects of Contingency Instructions on Extinction Learning and Context-Dependent Return of Fear (13:00 – 14:30)

Annalisa Lipp, *Ruhr-University Bochum*; **Beray Macit**, *Ruhr-University Bochum*; **Christian J. Merz**, *Ruhr-University Bochum*; **Oliver T. Wolf**, *Ruhr-University Bochum*; **Jürgen Margraf**, *Ruhr-University Bochum*; **Marcella L. Woud**, *Ruhr-University Bochum; University of Gottingen*; **Armin Zlomuzica**, *Ruhr-University Bochum*

A 87 - How Intention Shapes Neural Process of Moral Conflict in Borderline Personality Disorder? (13:00 – 14:30)

Buket Sen, *Charité Universitätsmedizin Berlin, Berlin; Berlin School of Mind and Brain, Humboldt University Berlin, Berlin*; **Renee Lipka**, *Charité Universitätsmedizin Berlin, Berlin; Berlin School of Mind and Brain, Humboldt University Berlin, Berlin*; **Arno Villringer**, *Charité Universitätsmedizin Berlin, Berlin; Berlin School of Mind and Brain, Humboldt University Berlin, Berlin; Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig*; **Katja Wingenfeld**, *Charité Universitätsmedizin Berlin, Berlin; DZPG (German Center for Mental Health, Berlin*

A 88 - Developmental Differences in False Belief Understanding: An ERP Study in Adults and Children (13:00 – 14:30)

Shuting Li, *Ludwig-Maximilians-Universität München, Germany*; **Stella Serena Grosso**, *Ludwig-Maximilians-Universität München, Germany*; **Tobias Schuwerk**, *Ludwig-Maximilians-Universität München, Germany*; **Jörg Meinhardt**, *Ludwig-Maximilians-Universität München, Germany*; **Beate Sodian**, *Ludwig-Maximilians-Universität München, Germany*

A 89 - Temporal and Spatial Features of Neural Correlates Underlying Auditory and Visual Hysteresis (13:00 – 14:30)

Tim Redepenning, *Bielefeld University, Faculty of Psychology and Sports Science*; **Miguel Ángel Porta-Garcia**, *Centro de Investigacion e Innovacion en Tecnologias de la Informacion y Comunicacion (INFOTEC, Consejo Nacional de Humanidades, Ciencias y Tecnologias (CONAHCYT*; **Christoph Schütz**, *Bielefeld University, Faculty of Psychology and Sports Science; Bielefeld University, CITEC, Center for Cognitive Interaction Technology*

A 90 - Investigating the Decoupling Hypothesis of Alexithymia: Emotion Regulation and Psychophysiological Response (13:00 – 14:30)

Sarah Tholl, *University of Konstanz, Germany*; **Stephanie N.l. Schmidt**, *University of Konstanz, Germany*; **Shao-min Hung**, *Waseda University, Tokyo, Japan*; **Daniela Mier**, *University of Konstanz, Germany*

A 91 - From Adversity to Psychopathology: Long-Term Epigenetic Consequences in Adversity-Divergent Twins (13:00 – 14:30)

Dominika Repcikova, *Department of Behavioral and Cognitive Sciences, University of Luxembourg, Esch-Sur-Alzette, Luxembourg*; **Jeanne Le Cléac'h**, *Department of Infection and Immunity, Luxembourg Institute of Health, Esch-sur-Alzette, Luxembourg; Faculty of Science, Technology and Medicine, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Archibold Mposhi**, *Department of Infection and Immunity, Luxembourg Institute of Health, Esch-sur-Alzette, Luxembourg*; **Jonathan D. Turner**, *Department of Infection and Immunity,*

Luxembourg Institute of Health, Esch-sur-Alzette, Luxembourg; **Conchita D'Ambrosio**, *Department of Behavioral and Cognitive Sciences, University of Luxembourg, Esch-Sur-Alzette, Luxembourg*; **Claus Vögele**, *Department of Behavioral and Cognitive Sciences, University of Luxembourg, Esch-Sur-Alzette, Luxembourg*

A 92 - Trajectories of Emotional Processing: Implicit and Explicit Biases in the Course of Major Depressive Disorder (13:00 – 14:30)

Katharina Hierl, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität, Dresden, Germany*; **Liane Wollweber**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität, Dresden, Germany*; **Dominik Grotegerd**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Katharina Dohm**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Anna Kraus**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Elisabeth Johanna Leehr**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany; Department of Clinical Psychology and Psychotherapy, Georg-August-University of Gottingen, Germany*; **Philipp Kanske**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität, Dresden, Germany*; **Udo Dannlowski**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Katharina Förster**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität, Dresden, Germany; Department of Psychology, Universität Hamburg, Hamburg, Germany*

A 93 - Effects of State Anxiety on Defensive Responses in a Human Virtual Open Field Test (13:00 – 14:30)

Daniel Gromer, *University of Würzburg*; **Sabrina Gado**, *University of Würzburg*; **Francesco Tortora**, *University of Würzburg*; **Chelsi Abdraimova**, *University of Würzburg*; **Marta Andreatta**, *University Hospital Tübingen*; **Matthias Gamer**, *University of Würzburg*

A 94 - Facing Reality: A Mobile-EEG-VR-Study of Dynamic Face Processing and Recognition Using Virtual Avatars (13:00 – 14:30)

Jonas Sieverding, *Experimental Psychology I, Institute of Psychology, Universität Osnabrück, Germany*; **Merle Sagehorn**, *Experimental Psychology I, Institute of Psychology, Universität Osnabrück, Germany*

A 95 - Electrophysiological Correlates of Modality-Dependent Shifts in Source Memory Retrieval: Insights from two Virtual Reality Studies. (13:00 – 14:30)

Marius Soethe, *Osnabrück University, Germany*; **Joanna Kisker**, *Osnabrück University, Germany*

A 96 - Integration of Counterfactual Outcomes Reduces External Information Seeking Behavior (13:00 – 14:30)

Lisa M. Bas, *Julius-Maximilians-Universität Würzburg, Germany; Universitätsklinikum Würzburg, Germany*; **Kate Nussenbaum**, *Princeton University, United States*; **Nathaniel D. Daw**, *Princeton University, United States*; **Lorenz Deserno***, *Universitätsklinikum Würzburg, Germany*; **Andrea M. F. Reiter***, *Julius-Maximilians-Universität Würzburg, Germany; Universitätsklinikum Würzburg, Germany*

A 97 - Does Exercise Type Matter? Neurocognitive Effects of Different Modalities of Physical Exercise (13:00 – 14:30)

Melanie Klapprott, *Neuropsychology Lab, Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany*; **Stefan Debener**, *Neuropsychology Lab, Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany; Excellence Cluster Hearing4All*

A 98 - Social Presence Affects Prosocial Motivation in a Naturalistic Story-Telling Context (13:00 – 14:30)

Jannik Heimann, *Institute of Medical Psychology, Universität zu Lübeck, Germany*; **Anat Perry**, *Psychology Department, Hebrew University of Jerusalem, Israel*; **Ulrike M. Krämer**, *Institute of Medical Psychology, Universität zu Lübeck, Germany*

A 99 - VR Safety: Mitigating Physical and Psychological Risks in Freely Moving Virtual Reality Studies (13:00 – 14:30)

Lukas Kornemann, *Center for Artificial Intelligence and Neuroscience, Transdisciplinary Area Life and Health, University of Bonn, Bonn, Germany*; **Yonatan Hutabarat**, *Center for Artificial Intelligence and Neuroscience, Transdisciplinary Area Life and Health, University of Bonn, Bonn, Germany*; **Sajjad Zabbah**, *University College London, Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute for Neurology, London, United Kingdom*; **Ulises Daniel Serratos Hernandez**, *University College London, Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute for Neurology, London, United Kingdom*; **Max Pensel**, *University Clinic Bonn, Clinic for Psychiatry and Psychotherapy, University of Bonn, Bonn, Germany*; **Dominik R. Bach**, *Center for Artificial Intelligence and Neuroscience, Transdisciplinary Area Life and Health, University of Bonn, Bonn, Germany; University College London, Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute for Neurology, London, United Kingdom*

A 100 - The Effects of Physical Exercise on Cognitive and Language Functions in Adults with Down Syndrome: The "DS in Motion" Project (13:00 – 14:30)

Mira Fischer, *Department of Neurology, Ludwig-Maximilians-University, Munich, Germany; German Center for Neurodegenerative Diseases (DZNE, Munich, Germany.*; **Johannes Levin**, *Department of Neurology, Ludwig-Maximilians-University, Munich, Germany; German Center for Neurodegenerative Diseases (DZNE, Munich, Germany.*; **Joachim Hermsdörfer**, *Chair of Human Movement Science, TUM School of Medicine and Health, Technical University of Munich, Germany.*

A 101 - Influence of Instructions on Subjective Experience During Resting-State (13:00 – 14:30)

Tomko Settgast, *Julius-Maximilians-Universität Würzburg, Germany*; **Linus Schläger**, *Julius-Maximilians-Universität Würzburg, Germany*; **Andrea Kübler**, *Julius-Maximilians-Universität Würzburg, Germany*

A 102 - The FlexER-Scale: A New Self-Report Measure of Individual Differences (13:00 – 14:30)

Anne Gärtner, *Technische Universität Dresden; Freie Universität Berlin*; **Christoph Scheffel**, *Technische Universität Dresden*; **Timo Schweikert**, *Justus-Liebig-Universität Gießen*; **Denise Dörfel**, *Technische Universität Dresden*

A 103 - The Influence of Storage Duration on Hair Cortisol and Other Endocrine Analyte Concentrations: A Systematic Within-Subject Investigation (13:00 – 14:30)

Katharina Huthsteiner, *University of Siegen, Germany*; **Johannes B. Finke**, *University of Siegen, Germany*; **Tim Klucken**, *University of Siegen, Germany*; **Tobias Stalder**, *University of Siegen, Germany*

A 104 - How Non-Genomic and Genomic Cortisol Effects Influence the Return Of Fear After Extinction Training in Multiple Contexts (13:00 – 14:30)

Leander Fester, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*; **Jael Caviola**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*; **Lianne N. Wolsink**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*; **Katharina Beck**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*; **Oliver T. Wolf**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*; **Valerie L. Jentsch**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*; **Christian J. Merz**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum*

A 105 - Associations Between Inhibitory Control and Subjective Values of Emotion Regulation Strategies (13:00 – 14:30)

Christoph Scheffel, *Fakultät Psychologie, Technische Universität Dresden, Germany*; **Anne Gärtner**, *Fakultät Psychologie, Technische Universität Dresden, Germany; Fachbereich Erziehungswissenschaft und Psychologie, Freie Universität Berlin*

A 106 - Which Scalp Sampling Region Should be Preferred for Endocrine Hair Analysis? A Systematic Comparison Between the Posterior Vertex and Occipital Region and Recommendations for Standardization. (13:00 – 14:30)

Katharina Huthsteiner, *University of Siegen, Germany*; **Johannes B. Finke**, *University of Siegen, Germany*; **Eva M.J. Peters**, *Department of Psychosomatic Medicine and Psychotherapy, Justus-Liebig University of Giessen, Germany and Department of Psychosomatic Medicine and Psychotherapy, Philipps-University of Marburg, Marburg, Germany; Charité Center for Internal Medicine and Dermatology, Department of Psychosomatic Medicine, Charité-Universitätsmedizin Berlin, Corporate Member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany*; **Kristian Kleinke**, *University of Siegen, Germany*; **Tim Klucken**, *University of Siegen, Germany*; **Tobias Stalder**, *University of Siegen, Germany*

A 107 - The Role of Sleep in Synaptic Downscaling: Evidence from MRS (13:00 – 14:30)

Daniela Ramirez Butavand, *Department Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; Human Movement, Training and Active Aging Department, Institute of Sports and Sports Science, University of Heidelberg, Heidelberg, Germany*; **Markus Sack**, *Department Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Jasmin Gebhard**, *Department Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Gabriele Ende**, *Department Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Simon Steib**, *Human Movement, Training and Active Aging Department, Institute of Sports and Sports Science, University of Heidelberg, Heidelberg, Germany*; **Gordon Feld**, *Department Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*

A 108 - Human vs. Robot: Perception of Robotic Interaction in Geriatric Healthcare (13:00 – 14:30)

Carlotta Julia Mayer, *Heidelberg University, Heidelberg University Hospital, Germany*; **Charlotte Raithel**, *Heidelberg University, Heidelberg University Hospital, Germany*; **Hana Yamamoto**, *Karlsruhe Institute of Technology, Germany*; **Theresa Buchner**, *Agaplesion Bethanien Hospital Heidelberg, Germany*; **Beat Simon Vincent Iwan**, *Heidelberg University, Heidelberg University Hospital, Germany*; **Andrea Tempel**, *Heidelberg University, Heidelberg University Hospital, Germany*; **Elias Staatz**, *Heidelberg University, Heidelberg University Hospital, Germany*; **Christian Werner**, *Agaplesion Bethanien Hospital Heidelberg, Germany*; **Beate Ditzen**,

Heidelberg University, Heidelberg University Hospital, Germany; **Katja Mombaur**, *Karlsruhe Institute of Technology, Germany*; **Monika Eckstein**, *Heidelberg University, Heidelberg University Hospital, Germany*

A 109 - How Does Adversity Get Under the Skin? Associations Between Adverse Childhood Experiences and Conditioned Fear Responding (13:00 – 14:30)

Julia Ruge, *University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany*; **Anja Riesel**, *University of Hamburg, Germany*; **Tania Lincoln**, *University of Hamburg, Germany*; **Tina B. Lonsdorf**, *University of Bielefeld, Germany*

A 110 - Sign Language Alters High-level Visual Regions Involved in the Perception of Hands (13:00 – 14:30)

Larissa Kahler, *AG Developmental Cognitive Neuroscience, Child Neuropsychology Section, Department of Child and Adolescent Psychiatry, Psychosomatics, and Psychotherapy, Medical Faculty, RWTH Aachen University, Aachen, Germany*; **Marisa Nordt**, *AG Developmental Cognitive Neuroscience, Child Neuropsychology Section, Department of Child and Adolescent Psychiatry, Psychosomatics, and Psychotherapy, Medical Faculty, RWTH Aachen University, Aachen, Germany; JARA-Brain Institute II, Molecular Neuroscience and Neuroimaging, RWTH Aachen and Research Centre Juelich, Juelich, Germany*

A 111 - Effects of Circadian Cortisol Variations on Cognitive Emotion Regulation (13:00 – 14:30)

Mustafa Yildirim, *Ruhr University Bochum, Germany*; **Christian J. Merz**, *Ruhr University Bochum, Germany*; **Valerie L. Jentsch**, *Ruhr University Bochum, Germany*; **Katja Langer**, *Ruhr University Bochum, Germany*

A 112 - Time-Invariant Facilitation of Same-Colored Objects Beyond Spatial Selection (13:00 – 14:30)

Sebastian Wehle, *Universität Leipzig, Germany*; **Christopher Gundlach**, *Universität Leipzig, Germany*; **Norman Forschack**, *Universität Leipzig, Germany*; **Matthias Müller**, *Universität Leipzig, Germany*

A 113 - Ignore the Blue Elephant! Effects of Cue Instruction on Feature-Based Visual Attention (13:00 – 14:30)

Jonas Jänig, *Universität Leipzig, Germany*; **Christopher Gundlach**, *Universität Leipzig, Germany*; **Norman Forschack**, *Universität Leipzig, Germany*; **Matthias M. Müller**, *Universität Leipzig, Germany*

A 114 - Preliminary Insights into Enhancing Smoking Cessation Through Sleep-Enhanced Cognitive Control (13:00 – 14:30)

Michaela Kroth, *Department of Clinical Psychology, Central Institute of Mental Health, University of Heidelberg; German Center for Mental Health (DZPG*; **Sarah Gerhardt**, *Department of Addictive Behaviour and Addiction Medicine, Central Institute of Mental Health, University of Heidelberg*; **Dennis Schwarz**, *Institute of Sports and Sports Sciences (ISSW, University Heidelberg*; **Alexandra Seeger**, *Department of Addictive Behaviour and Addiction Medicine, Central Institute of Mental Health, University of Heidelberg*; **Roland Schmitt**, *Department of Addictive Behaviour and Addiction Medicine, Central Institute of Mental Health, University of Heidelberg*; **Karen Ersche**, *Department of Addictive Behaviour and Addiction Medicine, Central Institute of Mental Health, University of Heidelberg; Department of Psychiatry, Cambridge*; **Gordon Feld**, *Department of Clinical Psychology, Central Institute of Mental Health, University of Heidelberg; Department of Addictive Behaviour and Addiction Medicine, Central Institute of Mental Health, University of Heidelberg; Psychological Institute, University of Heidelberg; Department of Psychiatry and Psychotherapy, Central Institute*

of Mental Health, University of Heidelberg; German Center for Mental Health (DZPG; **Sabine Vollstädt-Klein**, *Department of Addictive Behaviour and Addiction Medicine, Central Institute of Mental Health, University of Heidelberg; German Center for Mental Health (DZPG*

A 115 - The Impact of Social Exclusion on Neural Processing of Unfairness in the Ultimatum Game (13:00 – 14:30)

Corinna Lorenz, *Bergische Universität Wuppertal, Germany*; **Anna Baumert**, *Bergische Universität Wuppertal, Germany*; **Nicola Kristina Ferdinand**, *Bergische Universität Wuppertal, Germany*

A 116 - Modelling the Formation of Empathy Towards Multiple Individuals (13:00 – 14:30)

Yang Xu, *Translational Social Neuroscience Unit, Department of Psychiatry, University of Würzburg*; **Luca Kaiser**, *Translational Social Neuroscience Unit, Department of Psychiatry, University of Würzburg*; **Grit Hein**, *Translational Social Neuroscience Unit, Department of Psychiatry, University of Würzburg*

A 117 - Reward Sensitivity Over the Follicular Phase (13:00 – 14:30)

Charlotte F. Kroll, *Maastricht University, The Netherlands*; **Hannah Klusmann**, *Freie Universität Berlin, Germany*; **Arno Riedl**, *Maastricht University, The Netherlands*; **Conny Quaedflieg**, *Maastricht University, The Netherlands*; **Dennis Hernaus**, *Maastricht University, The Netherlands*

A 118 - Avoiding Pain to Others Motivates Effortful Prosocial Behavior Reducing Prosocial Apathy (13:00 – 14:30)

Claudia Massaccesi, *University of Vienna, Austria; University of Bielefeld, Germany*; **Lei Zhang**, *University of Birmingham, UK*; **Giorgia Silani**, *University of Vienna, Austria*; **Claus Lamm**, *University of Vienna, Austria*

A 119 - Modulation of Neural Drug Cue Reactivity by Design-Related and Clinical Factors: A Neuroimaging Meta-Analysis (13:00 – 14:30)

Maximilian Fascher, *MSH Medical School Hamburg - University of Applied Sciences and Medical University, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Am Kaiserkai 1, 20457 Hamburg, Germany*; **Henriette Thomsen**, *MSH Medical School Hamburg - University of Applied Sciences and Medical University, Germany*; **Markus Muehlhan**, *MSH Medical School Hamburg - University of Applied Sciences and Medical University, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Am Kaiserkai 1, 20457 Hamburg, Germany*

A 120 - Ambulatory Assessment of Psychological and Physiological Stress Responses Transitioning Between Green and Gray Spaces During Naturalistic Urban Mobility (13:00 – 14:30)

Dilber Korkmaz, *University of Cologne, Germany*; **Qingyue Bi**, *University of Cologne, Germany*; **Michelle Moller**, *University of Cologne, Germany*; **Kilian Knauth**, *University of Cologne, Germany*; **Jan Peters**, *University of Cologne, Germany*

A 121 - The Role of CRP-specific DNA Methylation in the Association of Work-related Stress, Burnout and Depression (13:00 – 14:30)

Sabrina Illius, *Department of Psychology, Faculty of Human Sciences, Medical School Hamburg, Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Hamburg, Germany*; **Julian Eder**, *Chair of Biopsychology, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*; **Friederike David**, *Institute of Human Genetics, University of Bonn, School of Medicine & University Hospital Bonn, Bonn, Germany; Center for Mind, Brain and Behavior, Philipps University Marburg, Marburg, Germany*; **Susanne Vogel**, *Department of Psychology, Faculty of Human Sciences, Medical School Hamburg, Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Hamburg, Germany*; **Nicole Rothe**, *Chair of Biopsychology, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*; **Magdalena Wekenborg**, *Chair of Biopsychology, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*; **Marlene Penz**, *Institute of Education and Psychology, Johannes Kepler University, Linz, Austria*; **Andreas Walther**, *Clinical Psychology and Psychotherapy, University of Zurich, Zurich, Switzerland*; **Clemens Kirschbaum**, *Chair of Biopsychology, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*; **Nina Alexander**, *Center for Mind, Brain and Behavior, Philipps University Marburg, Marburg, Germany; Department of Psychiatry and Psychotherapy, Philipps University Marburg, Marburg, Germany*

A 122 - The Gut-Brain Axis in Comorbid Depression and Obesity: A Systemic Approach to Individual Patient Profiles (13:00 – 14:30)

Johannes Meixner, *Brandenburg Medical School, Germany*; **Luca Kubin**, *Brandenburg Medical School, Germany*; **Kerstin Jost**, *Brandenburg Medical School, Germany*

A 123 - Neural and Pupillary Oscillations of External and Internal Information Processing Modes during Emotional Speech Processing and Visuo-spatial Workload (13:00 – 14:30)

Katharina Lingelbach, *Applied Neurocognitive Psychology, Department of Psychology, Carl von Ossietzky University, Oldenburg, Germany; Applied Neurocognitive Systems, Fraunhofer Institute for Industrial Engineering IAO, Stuttgart, Germany*; **Jochem W. Rieger**, *Applied Neurocognitive Psychology, Department of Psychology, Carl von Ossietzky University, Oldenburg, Germany*; **Christoph S. Herrmann**, *Experimental Psychology Lab, Department of Psychology, Carl von Ossietzky University, Oldenburg, Germany*

A 124 - Timbral Acoustic Properties Contribute to Differences in Neural Representations Between Musical Pieces from Different Musical Traditions and Cultures (13:00 – 14:30)

Theodoros Koustakas, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Germany; International Max Planck Research School on the Life Course (LIFE, Berlin, Germany*; **Eleftheria Papadaki**, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Germany*; **Petr Janata**, *Center for Mind and Brain, University of California Davis, Davis, California, USA*; **André Werner**, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Germany*; **Simone Kühn**, *Center for Environmental Neuroscience, Max Planck Institute for Human Development, Berlin, Germany.; Neuronal Plasticity Working Group, Department of Psychiatry and Psychotherapy, University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Ulman Lindenberger**, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Germany; Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Berlin, Germany*; **Elisabeth Wenger**, *Department of Psychology, HMU Health and Medical University, Potsdam Germany*

A 125 - Modular Functional Brain Network Organization Contributes to Training-related Changes in Task Switching in Children (13:00 – 14:30)

Sina A. Schwarze, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Berlin, Germany*; **Ulman Lindenberger**, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Berlin, Germany; Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Berlin, Germany, and London, UK*; **Silvia A. Bunge**, *Department of Psychology and Helen Wills Neuroscience Institute, University of California at Berkeley, USA*; **Yana Fandakova**, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Berlin, Germany; Department of Psychology, University of Trier, Germany*

A 126 - The Influence of Circadian Rhythm on Brain Tissue Microstructure (13:00 – 14:30)

Manfredi Alberti, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*; **Sebastian Mueller**, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*; **Svenja Klinkowski**, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*; **Michael Erb**, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*; **Klaus Scheffler**, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*; **Steffen Gais**, *Institute of Medical Psychology, University of Tübingen, Tübingen, Germany*; **Monika Schönauer**, *Institute of Psychology, Neuropsychology, University of Freiburg, Freiburg, Germany*; **Svenja Brodt**, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*

A 127 - Psychopathy, and Moral Beliefs and Their Relation to Decision-Making in Moral Dilemmas (13:00 – 14:30)

Kathrin Reich, *Julius-Maximilian University Würzburg, Germany*; **Johannes Hewig**, *Julius-Maximilian University Würzburg, Germany*; **Marko Paelecke**, *Julius-Maximilian University Würzburg, Germany*; **Carlo Garofalo**, *Julius-Maximilian University Würzburg, Germany*; **Rebecca Hildebrandt**, *Julius-Maximilian University Würzburg, Germany*

A 128 - The Interplay of Attention and Causal Inference in Audiovisual Perception (13:00 – 14:30)

Celine Fleischmann, *Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany*; **Lübeyna Özkaya**, *Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany*; **Jana Lemkuhl**, *Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany*; **Melina Schmetterer**, *Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany*; **Tim Rohe**, *Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany*

A 129 - The Effects of Stress on Affective Self-Other Distinction and Self-saliency (13:00 – 14:30)

Konstantin Michael Döhr, *University of Lübeck, Germany - Institute of Medical Psychology; University of Lübeck, Germany - Centre for Brain, Behavior and Metabolism (CBBM*; **Ulrike M. Krämer**, *University of Lübeck, Germany - Institute of Medical Psychology; University of Lübeck, Germany - Centre for Brain, Behavior and Metabolism (CBBM*

A 130 - The Effects of a Lag and Presentation on ERP Amplitude in a Continuous Recognition Memory Task (13:00 – 14:30)

Elena Cesnaite, *Münster University, Germany*

A 132 - Cognitive-Attentional Modulation of Experimentally Induced Pain: The Effects of Sensory Focus and Distraction in a Cross-Over Design (13:00 – 14:30)

Corinna Baum, *Fresenius University of Applied Sciences, Germany*; **Janina Wurtz**, *Fresenius University of Applied Sciences, Germany*; **Julika Horchler**, *Fresenius University of Applied Sciences, Germany*; **Nina Lasai**, *Fresenius University of Applied Sciences, Germany*; **Pia Redecker**, *Fresenius University of Applied Sciences, Germany*; **Anne Martinelli**, *Fresenius University of Applied Sciences, Germany*

A 133 - Local Predictive Context Enhances and Speeds Up Priming-Induced N400 Effect (13:00 – 14:30)

Anna Petukhova, *Philipps University Marburg*; **Florian Hintz**, *Philipps University Marburg*; **Benjamin Straube**, *Philipps University Marburg*; **Yifei He**, *Philipps University Marburg*

A 134 - Pain Sensitivity and Cognitive Coping Strategies in Individuals Engaging in Non-suicidal Self-injury (13:00 – 14:30)

Pia Redecker, *Fresenius University of Applied Sciences, Germany*; **Janina Wurtz**, *Fresenius University of Applied Sciences, Germany*; **Maureen Schitter**, *Fresenius University of Applied Sciences, Germany*; **Anne Martinelli**, *Fresenius University of Applied Sciences, Germany*; **Corinna Baum**, *Fresenius University of Applied Sciences, Germany*

A 135 - Orexinergic Modulation of Human Cognition (13:00 – 14:30)

Jana Tegelbeckers, *Otto von Guericke University, Magdeburg, Germany; German Center for Mental Health (DZPG, Halle-Jena-Magdeburg, Germany*; **Bastian Schulzke**, *Otto von Guericke University, Magdeburg, Germany; Klinik für Psychiatrie und Psychotherapie, Charité Universitätsmedizin Berlin, Germany*; **Anne-Sophie Wolters**, *Otto von Guericke University, Magdeburg, Germany*; **Markus Ullsperger**, *Otto von Guericke University, Magdeburg, Germany; German Center for Mental Health (DZPG, Halle-Jena-Magdeburg, Germany; Center for Behavioral Brain Sciences (CBBS, Magdeburg, Germany*

A 136 - Threat Imminence and Individual Differences in Negative Affective States and Traits Influence Electrocortical Positive Prediction Error Processing During Threat Avoidance Learning (13:00 – 14:30)

Christopher Stolz, *Department of Neuropsychology, Institute of Psychology, Otto-von-Guericke University, Magdeburg, Germany*; **Markus Ullsperger**, *Department of Neuropsychology, Institute of Psychology, Otto-von-Guericke University, Magdeburg, Germany*

A 137 - Solving Object Puzzles: How Do We Make Decisions in a Visual World? (13:00 – 14:30)

Çağatay Gürsoy, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychology, Ruprecht Karl University of Heidelberg, Heidelberg, Germany*; **Samuel Sander**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany*; **Gordon B. Feld**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychology, Ruprecht Karl University of Heidelberg, Heidelberg, Germany*

A 138 - Latent-State-Trait Models of Resting Frontal Asymmetry with Short Data Collection Intervals: Exploratory Approach (13:00 – 14:30)

Paulina Dupont-Christ, *Julius-Maximilians Universität Würzburg, Germany*; **Johannes Rodrigues**, *Julius-Maximilians Universität Würzburg, Germany*; **Katharina Paul**, *Universität Hamburg*; **Jan Wacker**, *Universität Hamburg*; **Johannes Hewig**, *Julius-Maximilians Universität Würzburg, Germany*

A 139 - Trace Conditioning Enhances Resistance to Appetitive Extinction: Evidence from Self-Report and Psychophysiology (13:00 – 14:30)

Johannes B. Finke, *University of Siegen, Germany*; **Anna M Schippers**, *University of Siegen, Germany*; **Tim Klucken**, *University of Siegen, Germany*

A 140 - Shades of Empathy Crossing Shades of Psychopathy: Coldheartedness Related to Lower Physiological Reactivity and Affective Empathy (13:00 – 14:30)

Hedwig Eisenbarth, *Victoria University of Wellington, New Zealand*; **Anna Dapprich**, *Karakter, The Netherlands*; **Joana B. Vieira**, *Utrecht University, The Netherlands*

A 141 - Disgust-evoking Odors and Learning: Comparing Trace and Delay Conditioning (13:00 – 14:30)

Anna Maria Schippers, *University of Siegen, Germany*; **Tim Klucken**, *University of Siegen, Germany*; **Johannes Bernd Finke**, *University of Siegen, Germany*

The Emergence and Transformation of Memory Representations in the Human Brain (14:30 – 16:00)

Schultz, Heidrun; Benoit, Roland G.

A remarkable feature of the human mind is the ability to retain memories at different levels of abstraction. We not only have detailed, vivid memories of specific experiences, but also store generalized memories that are based on distinct experiences. This symposium will track the emergence and transformation of such diverse memory representations in the brain. Deniz Kumral will first demonstrate how the formation of memories is reflected in alterations of the brain's microstructure. Anne Bierbrauer will then show how consolidation leads to an emphasis of an episode's gist at the cost of specific details. Afterwards, Heidrun Schultz will elucidate how reward influences the emergence of generalized memory representations, and Mona Garvert will examine how they are influenced by conditioned fear. Finally, Roland Benoit will provide causal evidence for the neural basis of such memory representations. Together, the five presentations will provide a current perspective on the nature of neural memory representations and how they evolve over time.

Temporal Dynamics of Microstructural Plasticity in the Human Brain (14:30 – 16:00)

Deniz Kumral, *Institute of Psychology, Neuropsychology, University of Freiburg, Freiburg im Breisgau, Germany; BrainLinks-BrainTools, University of Freiburg, Freiburg im Breisgau, Germany*; **Antonia Lenders**, *Institute of Psychology, Neuropsychology, University of Freiburg, Freiburg im Breisgau, Germany*; **Monika Schönauer**, *Institute of Psychology, Neuropsychology, University of Freiburg, Freiburg im Breisgau, Germany; BrainLinks-BrainTools, University of Freiburg, Freiburg im Breisgau, Germany; Bernstein Center Freiburg, University of Freiburg, Freiburg im Breisgau, Germany*

Neuroplasticity, the brains capacity for functional or structural changes following a learning experience, allows humans to learn and form new memories. With new neuroscientific methods, such as diffusion-weighted MRI (DW-MRI), we can now characterize brain microstructural changes that signal neuroplasticity by assessing motion profiles of water molecules. Recent studies have shown that during repeated encoding and retrieval of an objectlocation learning task, a physical memory trace is formed rapidly

in the parietal cortex, which can be observed already 90 minutes after training. The exact temporal dynamics of microstructural changes following a learning experience are, however, unclear. Here, we investigated functional and structural changes in the brain over the course of learning. Seventy-six participants completed an object-location learning task with repeated encoding and retrieval of image pairs and their locations, while a no-learning control condition (N=38) was tested at corresponding times. To assess structural changes, DW-MRI was acquired at 22 time points across three hours: one hour before the learning, during learning, and a one-hour-long wake rest phase after learning. We observe a decrease in mean diffusivity (MD), reflecting neural plasticity, directly following the learning task in the precuneus, cerebellum, and lateral occipital cortex, while we observe no structural changes in the control group. Further, these MD decreases further develop during the rest phase. Notable, within-person associations reveal that microstructural changes during learning are linked to memory performance. We confirm the rapid build-up of long-term memory representation, highlighting the dynamic nature of neuroplasticity and its crucial role in memory formation.

From Detail to Gist? The Role of Consolidation in Real-Life Episodic Memory Transformation (14:30 – 16:00)

Anne Bierbrauer, *Institute of Systems Neuroscience, Medical Center Hamburg-Eppendorf, Germany*; **Franziska Reiser**, *Institute of Systems Neuroscience, Medical Center Hamburg-Eppendorf, Germany*; **Lars Schwabe**, *Department of Cognitive Psychology, Institute of Psychology, University of Hamburg, Germany*; **Tobias Sommer**, *Institute of Systems Neuroscience, Medical Center Hamburg-Eppendorf, Germany*

Systems consolidation suggests a transformation of memory, where episodic details decrease, and gist information increases over time. Previous studies indicate this process involves a shift from the posterior to the anterior hippocampus, as well as from the hippocampus to cortical regions. However, most studies have focused on pictures or movies as proxies for real-life episodic memories. We present a 3-year longitudinal study on memory consolidation of real-life episodic memories. Ninety-two participants experienced twelve distinct, standardized real-life episodes. A wearable eye-tracker captured the ground truth of their encoded experiences, allowing us to track the transformation of these memories during consolidation. Participants underwent fMRI scanning the day after, 8 months, and 3 years later, while recalling the episodes, enabling us to quantify the involvement of brain regions during retrieval and how episode representations changed. An autobiographical memory interview (AMI) was conducted to assess the accuracy and detail richness of the memories. We also measured spontaneous memory reactivations, with preliminary results indicating a link between reactivations and the shift from episodic to gist-based information. fMRI data showed a shift in activation from the posterior to anterior hippocampus, as well as from hippocampus to cortical areas during long-term consolidation. Finally, we examined how stress and emotions influence episodic memory transformation by inducing stress in some episodes. Elevated cortisol, heart rate, and more negative emotional ratings confirmed successful stress manipulation. Preliminary results suggest a stress-driven centrality effect in fixation patterns, consistent with prior findings.

Concurrent Representations of Reinstated and Transformed Memories and Their Modulation by Reward (14:30 – 16:00)

Heidrun Schultz, *Max Planck Research Group Adaptive Memory, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Chair of Lifespan Developmental Neuroscience, TUD Dresden University of Technology, Dresden, Germany*; **Hanna Stoffregen**, *Max Planck Research Group Adaptive Memory, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Aroma Dabas**, *Max Planck Research Group Adaptive Memory, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Maria Alcobendas**, *Max Planck Research Group Adaptive Memory, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Department of Neurology, Charité-Universitätsmedizin Berlin, Berlin, Germany*; **Roland G. Benoit**, *Max Planck Research Group Adaptive Memory, Max Planck Institute for Human*

Cognitive and Brain Sciences, Leipzig, Germany; Department of Psychology and Neuroscience and Institute of Cognitive Science, University of Colorado Boulder, Boulder, CO, United States

An integral part of episodic retrieval is the reinstatement of neural activity that was present in the medial temporal lobe during encoding. However, neural memory representations do not remain static. Consolidation promotes the transformation of representations that are specific to individual episodes toward more generalized representations that reflect commonalities across episodes. Moreover, reward has been shown to augment episodic memory by enhancing consolidation, and it may accelerate the transformation of neural memory representations. We investigated this account with n=40 human participants using fMRI and an associative memory task. They encoded pictures of objects, each with one of four recurring scenes. Two scenes led to high reward, and two led to low reward. The next day, participants encountered the objects again and retrieved the scenes from memory. Using representational similarity analysis, we demonstrate that retrieval is concurrently accompanied by the reinstatement of original neural representations and the activation of transformed, more generalized memories. Specifically, the parahippocampal cortex reinstates scene-specific patterns from the encoding phase during successful retrieval. In contrast, activity patterns in the medial prefrontal cortex and anterior hippocampus reflect transformed memories: They become more similar to each other for memories sharing the same scene, independent of memory success. Importantly, high reward enhances memory transformation in the anterior hippocampus. The brain thus maintains complementary memory representations: An episodic representation that resembles the original encoding pattern, and a generalized representation that summarizes commonalities across memories - in part for particularly valuable information. Published as Schultz et al. (2025), Imaging Neuroscience, doi: 10.1162/imag_a_00476.

Anxiety and Pain Sensitivity Differentially Influence Generalisation Across Cognitive Maps (14:30 – 16:00)

Mona Garvert, *Universität Würzburg, Germany*

Avoiding danger is vital for survival, yet directly learning from dangerous situations often entails significant risks to our health and well-being. To mitigate these risks, the brain uses models of the world to generalise learned information to similar situations. Such generalisation is essential for adaptive behaviour, enabling efficient decision-making based on limited experiences without the need for constant relearning. However, not all generalisations are beneficial or accurate. Exaggerated generalisation of aversive information, in particular, can result in excessive avoidance of anticipated dangers, profoundly impairing daily life. In this study, we integrated a cognitive map formation task with a fear-conditioning paradigm to examine how aversive information spreads across cognitive maps. Pupil dilation revealed that anxious-depressive traits are associated with the formation of less precise cognitive maps and distinct map-based generalisation patterns. Heightened attention to pain, on the other hand, selectively influences learning about safety cues. These results shed light on the mechanisms underlying the formation of memory representations used for generalisation and their disruption in anxiety-related disorders.

The Schematic Scaffolding of Past and Future Episodes: Evidence from Human Brain Lesions and Natural Language Processing (14:30 – 16:00)

Mark E. Lauckner, *Max Planck Institute for Human Cognitive and Brain Sciences*; **Aljoscha Geier**, *Max Planck Institute for Human Cognitive and Brain Sciences*; **Hellmuth Obrig**, *Max Planck Institute for Human Cognitive and Brain Sciences; University of Leipzig*; **Roland G. Benoit**, *Max Planck Institute for Human Cognitive and Brain Sciences; University of Colorado Boulder*

The medial prefrontal cortex (mPFC) is thought to support the recollection of past episodes and the simulation of future episodes - specifically by mediating the

reinstatement of memory schemas. Memory schemas provide general knowledge about what to expect in a given scenario (e.g., the sequence of events when preparing a meal). Such general knowledge may scaffold the (re)construction of specific episodes. One methodological challenge in elucidating the contribution of the mPFC to schema reinstatement is the difficulty in assessing the schematic content of recollected and simulated episodes. Here, we first used natural language processing on a large data set to infer the schematic content of several everyday scenarios (e.g., preparing a new meal). Specifically, using topic-modelling, we determined the key reoccurring content across a large number of reported memories and simulations. We then examined whether people with mPFC lesions use less of that schematic content than matched controls. Traditional measures of autobiographical memory revealed that lesions to the mPFC caused impoverished recollections and simulations. This was at least partly due to a reduced reliance on schematic knowledge that otherwise seems to help scaffolding retrieval and simulation. Notably, as expected, the deficiency in using schematic content was particularly pronounced for future simulations. This is consistent with a stronger scaffolding demand for the simulation of novel episodes. Together, the data provide evidence for the critical contribution of the mPFC to the reinstatement of memory schemas.

Be Specific! Mapping the Neural Basis of Personality Across Emotion and Cognition (14:30 – 16:00)

Sicorello, Maurizio; Schubert, Anna-Lena

Personality traits are the core building blocks for understanding individual differences in daily functioning. While neurobiological theories of personality have a long history, their empirical validation remains challenging. A key challenge is the mapping of broad traits to much more fine-grained neuro-behavioral measures (or vice versa), neglecting their hierarchical organization. This symposium demonstrates how matching the specificity of traits, behaviors, temporal dynamics, and neural spatial resolution refines understanding of personality across the domains of emotion and cognition (N=150-450).

The first talk (emotional responses/trait resolution) presents a comprehensive machine learning multiverse analysis on a large fMRI dataset, demonstrating that neural responses to emotional stimuli robustly predict specific trait facets (e.g., vulnerability to stress) rather than broad domains (e.g., neuroticism).

The second talk (emotion regulation/behavioral resolution) distinguishes between the selection and implementation of emotion regulation strategies during EEG, showing differential associations to mental health-related personality traits and executive function.

The third talk (executive functions/temporal resolution) demonstrates a data-driven time-frequency decomposition of EEG responses to dissect cognitive flexibility across three tasks, refining the neural characterization of task switching.

The fourth talk (intelligence/spatial resolution) uses fine-grained white matter microstructure analyses to investigate fluid intelligence, integrating structural equation modeling with measures of structural integrity, axon density, and myelin content.

Lastly, a moderated discussion will integrate findings and future directions guided by models of personality neuroscience (e.g., Brunswick asymmetry, causal theory).

Together, this symposium highlights how methodological and statistical advances enhance the neurobiological mapping of personality, increasing precision across traits, processes, and neuroimaging techniques.

Finding Negative Affective Traits Across Different Brain Levels: A Comparison of Theory-guided Models and a Machine Learning Multiverse (14:30 – 16:00)

Maurizio Sicorello, *Central Institute of Mental Health, Germany*; **Peter J. Gianaros**, *University of Pittsburgh, USA*; **Aidan G.C. Wright**, *University of Michigan, USA*; **Bogdan Petre**, *Dartmouth College, USA*; **Thomas E. Kraynak**, *University of Pittsburgh, USA*; **Stephen B. Manuck**, *University of Pittsburgh, USA*; **Christian Schmahl**, *Central Institute of Mental Health, Germany*; **Tor D. Wager**, *Dartmouth College, USA*

The neural basis of personality is often inferred from activity in single brain regions or networks, but these approaches frequently lack validity for broad trait constructs. This talk presents theory-guided models and a comprehensive machine learning multiverse analysis on a large fMRI dataset (N=458), evaluating whether trait negative affectivity can be decoded from neural responses to emotional stimuli. Contrary to longstanding theories, we found Bayesian evidence against associations between neuroticism and traditional region- or network-based measures (e.g., amygdala, salience network) as well as complex neuro-affective signatures. However, whole-brain machine learning models successfully predicted the neuroticism facet vulnerability to stress (r=.21, replication r=.19), highlighting the importance of specificity when linking personality to neural data. Exploratory analyses across 14 affective constructs and 1176 model specifications further illustrate the task-dependence of neural trait prediction. Findings challenge common neurobiological interpretations of broad traits while demonstrating the utility of fine-grained, data-driven approaches for personality neuroscience.

Emotion Regulation Capacity measured with EEG: Associations with Executive Functions and Regulation Tendency (14:30 – 16:00)

Ulrike Basten, *RPTU Kaiserslautern-Landau, Germany*; **Hannah Plueckebaum**, *RPTU Kaiserslautern-Landau, Germany*; **Ann-kathrin Beck**, *RPTU Kaiserslautern-Landau, Germany*; **Rebecca Rammensee**, *RPTU Kaiserslautern-Landau, Germany*; **Dorian De La Fuente**, *RPTU Kaiserslautern-Landau, Germany*; **Roni Shafir**, *University of Maryland, USA*; **Tanja Lischetzke**, *RPTU Kaiserslautern-Landau, Germany*; **Julia Glombiewski**, *RPTU Kaiserslautern-Landau, Germany*; **Tina In-Albon**, *Universität Mannheim, Germany*; **Tanja Könen**, *RPTU Kaiserslautern-Landau, Germany*; **Julia Karbach**, *RPTU Kaiserslautern-Landau, Germany*

Previous studies suggest that different emotion regulation (ER) strategies vary in the effectiveness with which they reduce specific components of an emotional response. In this study, we investigate how individual differences in the effectiveness of distraction and reappraisal with regard to subjective experience as well as physiological responding are related to differences in (a) the selection of these strategies in adaptation to context factors like stimulus intensity, (b) executive functions (EF), and (c) mental health-related personality traits. In a non-clinical sample of N = 279 participants, we studied ER with an ER implementation and an ER selection task. For the ER implementation task, we analyzed individual differences in the capacity to reduce (a) ratings of subjectively experienced negative affect and (b) the amplitude of the late positive potential (LPP) in EEG with reappraisal vs. distraction. These measures of ER capacity were both positively correlated with the individual tendency to choose reappraisal as regulation strategy in the ER selection task - especially for emotional stimuli of high intensity. Regarding associations of ER with experimental measures of EF (inhibition, shifting, updating) and self-report measures of mental health-related personality traits findings were mixed and few correlations exceeded an effect size of .10. Overall, our findings suggest that in an experimental setting, individuals preferentially select the ER strategy that is most effective for them - both with respect to subjective experience as well as physiological responding. The talk will discuss why the empirical data do not consistently support theoretically expected associations with executive function and mental health.

Exploring Individual Differences in Cognitive Flexibility: A Data-driven Time-frequency Analysis Combined with Latent Change Modeling (14:30 – 16:00)

Mareike Hülsemann, *Johannes Gutenberg-Universität Mainz, Germany*; **Christoph Löffler**, *Johannes Gutenberg-Universität Mainz, Germany*; **Anna-Lena Schubert**, *Johannes Gutenberg-Universität Mainz, Germany*

Cognitive flexibility, the ability to adapt to changing task demands by switching between mental sets, is a key element of human behavior. It is discussed to contribute to individual differences in higher-order cognitive abilities. Studying individual differences in neural correlates of flexibility can help us unravel the mechanisms underlying cognitive flexibility. The present study investigated individual differences in event-related spectral perturbations via time-frequency analysis in three distinct cued task-switching paradigms (N = 148). We employed a data-driven approach, combining mass-univariate analyses with cluster-based permutation testing. Our analyses showed condition-specific differences in a cue- and target-related theta increase and alpha decrease, as well as in a target-related beta decrease. Using a latent change model, we found that only the enhanced parietal alpha decrease in switch compared to repeat trials in response to the cue and the target, loaded onto a common flexibility factor across tasks. Neither the greater theta increase nor the greater beta decrease in switch compared to repeat trials shared common variance across tasks, indicating that they do not reflect a consistent process. Furthermore, we observed no correlation between the latent flexibility factor and higher-order cognitive abilities. These findings challenge the notion that cognitive flexibility plays a significant role in individual differences observed in higher-order cognitive abilities. However, our analyses contribute to the broader understanding of cognitive flexibility by confirming the generalizability of the results across three distinct tasks and the specificity of the contributing frequency bands.

Deriving Measurement Models of White Matter Microstructure for Individual Differences Research on Intelligence (14:30 – 16:00)

Henrike Maria Jungeblut, *Johannes-Gutenberg Universität Maniz, Germany*; **Erhan Genc**, *Leibniz Research Center for Working Environment and Human Factors Dortmund, Germany*; **Michael Burke**, *Leibniz Research Center for Working Environment and Human Factors Dortmund, Germany*; **Patrick Darius Gajewski**, *Leibniz Research Center for Working Environment and Human Factors Dortmund, Germany*; **Stephan Getzmann**, *Leibniz Research Center for Working Environment and Human Factors Dortmund, Germany*; **Edmund Wascher**, *Leibniz Research Center for Working Environment and Human Factors Dortmund, Germany; German Center for Mental Health (DZPG, partner site Bochum/Marburg, Germany*; **Anna-Lena Schubert**, *Johannes-Gutenberg Universität Maniz, Germany*

White matter (WM) microstructure is a candidate brain property underlying individual differences in fluid intelligence, possibly facilitating faster information transfer within and across brain regions. To date, it remains uncertain whether MRI-derived markers of WM microstructure generalize across different tracts, enabling the modeling of general factors related with fluid intelligence in a latent variable framework. Using data of N = 150 participants from the ongoing Dortmund Vital Study (Gajewski et al., 2022), we applied confirmatory factor analysis to derive measurement models for markers of WM integrity, neurite density, and myelin content. We characterized their factor structure across ten functional clusters of 52 WM tracts from the HCP-1065 tract atlas. Hierarchical models with bifactors for the hemispheres proved optimal for all markers. Fluid intelligence measured with Ravens Progressive Matrices 2 was significantly explained by WM integrity (beta = 0.46, p = .002) and myelin content (beta = 0.20, p = .021). By establishing measurement models for WM, this study provides a framework for using MRI-derived markers in individual differences research while simultaneously shedding light on the biological basis of intelligence.

Resolution Matters: The Role of Construct Specificity in Mapping Personality to the Brain (14:30 – 16:00)

Anna-Lena Schubert, *Johannes Gutenberg-Universität Mainz, Germany*

The panel discussion will integrate insights from the four symposium talks, focusing on how increased specificity in psychological constructs, neural measures, and analytic strategies enhances the mapping between brain and behavior across emotion and cognition. As a conceptual anchor, I will introduce the Brunswik Symmetry principle (Wittmann & Su, 1988), which posits that empirical correlations are attenuated when measures are drawn from mismatched levels of hierarchical constructs. This framework highlights the importance of aligning levels of generalization - e.g., broad traits vs. specific neural responses - to accurately capture brain-behavior associations. We will explore how this principle applies to research on the neurocognitive basis of personality, and how it can guide the selection of appropriate levels of analysis. The panel will also address key methodological challenges, including multiverse analyses, measurement fidelity, and sample size constraints, and will outline future directions for integrating across levels of analysis. Audience participation will be encouraged to stimulate discussion around the conceptual and practical implications of high-resolution approaches in personality neuroscience.

Biopsychologische Perspektiven experimenteller Psychopathologie und Psychotherapie (14:30 – 16:00)

Richter, Jan

Ergebnisse experimenteller Untersuchungen ermöglichen Aussagen über kausale Zusammenhänge zwischen dysfunktional geprägten biopsychologischen Prozessen und der Entstehung, Aufrechterhaltung und (psychotherapeutischen) Behandlung psychischer Störungen. Die explizite Berücksichtigung transdiagnostischer Phänomene sowie ausgeprägter Heterogenität innerhalb von Störungskategorien überwindet Forschungsbarrieren der traditionellen deskriptiv-klassifikatorischen Konzeption von Psychopathologie und ermöglicht die notwendige mechanismenbasierte Neu- und Weiterentwicklung psychotherapeutischer Methoden. Das Symposium gibt einen Überblick über aktuelle Forschungsergebnisse aus verschiedenen Störungsbereichen und unter Berücksichtigung diverser Indikatoren der biologischen Systemebene. Anhand der Ergebnisse aus dem BMBF-Forschungsverbund protect-AD mit über 700 Patient*innen leitete Jan Richter (Universität Hildesheim) die Bedeutung der experimentellen Psychopathologie und Psychotherapie für das biopsychologische Verständnis pathologischer Furcht- und Angstreaktionen und deren optimierten Expositionstherapie nach den Prinzipien des emotionalen Lernens ab. Anschließend stellt Sarah K. Danböck (Universität Mannheim) die mit funktioneller Nahinfrarotspektroskopie abgebildeten neuronalen Mechanismen veränderter visueller und auditiver Wahrnehmung bei induzierten leichten dissoziativen Zuständen in 104 gesunden Probanden vor. Yunbo Yang (Universität Hildesheim) stellt danach die in einem neu entwickelten Paradigma erhobenen Verhaltens- und psychophysiologischen Korrelate (Hautleitfähigkeitsreaktion, elektromyographische Aktivität von Gesichtsmuskeln) affektiver expressiver Flexibilität bei 42 gesunden Teilnehmer*innen vor. In dem vierten Vortrag beantwortet Susanne Meinert (Universität Münster) die Frage, wie neurobiologische Veränderungen der Faserintegrität genutzt werden können, um neue Erkenntnisse über die Behandlung depressiver Störungen zu gewinnen, indem sie Diffusions-Tensorbildgebungsdaten und kognitive Leistungsfähigkeit bei über 400 Patient*innen mit Depressionen in einer 2-Jahresverlaufsmessung mit denen von über 450 gesunden Probanden vergleicht. Die zusammenfassende Diskussion schließt mit der Vorstellung eines bei der DFG beantragten nationalem Forschungsnetz für experimentelle Psychopathologie und Psychotherapie.

Prinzipien der Furchtextinktion als Grundlage einer optimierten expositionsbasierten Psychotherapie pathologischer Angst und Furcht (14:30 – 16:00)

Jan Richter, *University of Hildesheim, Hildesheim, Germany*; **Maike Hollandt**, *University of Greifswald, Greifswald, Germany*; **Alfons O. Hamm**, *University of Greifswald, Greifswald, Germany*

*Die bei Patient*innen mit Angststörungen zu beobachtenden klinischen Entitäten pathologischer Angst und Furcht können als dysfunktional geprägte Zustände eines*

*dynamisch organisierten Defensivsystems entlang einer Dimension angenommener Nahe zu einer subjektiv erwarteten Bedrohung konzeptualisiert werden. Während Prozesse der Furchtkonditionierung bei der Pathogenese maladaptiver Assoziationen angenommen werden, stehen Prozesse der Furchtextinktion im Vordergrund aktueller Wirkmodelle expositionsbasierter Psychotherapie. Daher wurde im deutschlandweiten Forschungsverbund protect-AD in einer Stichprobe von 726 Patient*innen ein nach den Prinzipien des inhibitorischen Lernens optimiertes und transdiagnostisches Behandlungsprotokoll getestet. In ersten Prozessanalysen zeigte sich, dass die Veränderung von zentralen Befürchtungen dysfunktional angenommener Bedrohung innerhalb der Expositionstherapie als Teil des Lernprozesses den Therapieerfolg vorhersagte, aber sich stark zwischen den Patient*innen unterschied. Diese ausgeprägte Heterogenität zeigte sich auch in den begleitenden Laboruntersuchungen, in denen der Basisprozess der Furchtextinktion in einem für die translationale Forschung optimierten Lernparadigma moduliert wurde. Datenbasiert konnten 5 Lerngruppen extrahiert werden, die sich stark in der Lernperformance unterschieden. Der Vortrag stellt einen Überblick über die bisherigen Ergebnisse dar und diskutiert mögliche Implikationen einer optimierten Gestaltung psychotherapeutischer Interventionen. Abschließend werden die Erkenntnisse in eine biopsychologische Perspektive experimenteller Psychopathologie und Psychotherapie für Angststörungen eingeordnet und der Bedarf an einem bei der DFG zur Förderung beantragtem nationalen Forschungsnetzwerks abgeleitet.*

Im Nebel - Neuronale Mechanismen veränderter visueller und auditiver Wahrnehmung während akuter Dissoziation (14:30 – 16:00)

Sarah K. Danböck, *Universität Mannheim, Germany*; **Maria Meier**, *Universität Konstanz, Deutschland*; **Jamie Moffat**, *Universität London, UK*; **Victoria Böhrer**, *Universität Mannheim, Germany*; **Fiona Braun**, *Universität Mannheim, Germany*; **Jule Heger**, *Universität Mannheim, Germany*; **Isabel Porstein**, *Universität Mannheim, Germany*; **Marie Westphäling**, *Universität Mannheim, Germany*; **Antje B.M. Gerdes**, *Universität Mannheim, Germany*; **Georg W. Alpers**, *Universität Mannheim, Germany*

Theoretischer Hintergrund: Dissoziative Symptome wie Depersonalisation (das Gefühl, von sich selbst losgelöst zu sein) und Derealisation (das Gefühl, von der Welt abgeschnitten zu sein) sind transdiagnostische Phänomene, die bei vielen psychischen Störungen auftreten. Basierend auf Theorien, klinischen Beobachtungen und Patientenberichten wird angenommen, dass bei akuter Depersonalisation/Derealisation die visuelle und auditive Wahrnehmung der Umgebung gedämpft ist. Betroffene berichten zum Beispiel, dass ihre Umgebung verschwommen oder wie im Nebel erscheint und dass Gerausche gedämpft oder weit weg sind. Darüber hinaus wird häufig postuliert, dass Dissoziation zu Gedächtnisstörungen beiträgt, die durch eine gedampfte Wahrnehmung vermittelt werden konnten. Fragestellung: Die vorliegende Studie beleuchtet die komplexe Beziehung zwischen Dissoziation, Wahrnehmung und Gedächtnisleistung. Methoden: 104 gesunde Probanden führten kurze Aufgaben durch, um vorübergehende leichte dissoziative Zustände hervorzurufen. Anschließend sahen sie kurze Filmclips oder hörten Hörbücher, während ihre Hirnaktivitat in visuellen und auditiven Regionen mittels funktioneller Nahinfrarotspektroskopie (fNIRS) aufgezeichnet wurde. Danach wurden sie zur Intensität der dissoziativen Symptome und ihrer Wahrnehmung während der Filmclips oder Hörbücher und zur Erinnerung an die Filmclips oder Hörbücher befragt. Ergebnisse: Die Ergebnisse der prä-registrierten Analysen werden auf dem Symposium vorgestellt. Schlussfolgerung: Die vorliegende Studie konnte unser Verständnis darüber verbessern, wie sich Dissoziation auf die Sinneswahrnehmung und das Gedächtnis auswirkt, was möglicherweise zu einer verfeinerten Konzeptualisierung, Erfassung und Behandlung von dissoziativen Symptomen beitragen konnte.

Behavioral and Psychophysiological Correlates of Affective Expressive Flexibility (AEF) to Psychopathology (14:30 – 16:00)

Yunbo Yang, *Institut für Psychologie, Stiftungs-Universität Hildesheim, Germany*

Affective flexibility (AF), the ability to regulate one's own emotions flexibly and adaptively, plays a crucial role in adapting to the dynamic external environment and the regulation of internal (affective) allostasis. Inspired by the emotional conflict paradigm, we developed and evaluated a new experimental paradigm for AEF. Instead of judging the emotional expressions during neutral (neutral-sad) vs. congruent (happy-happy) vs. incongruent (happy-fear) conditions, our participants were primed by an emotional facial expression (happy, fear, sad or neutral) and asked to express the emotion denoted by a word (happy, fear or sad). While performing the AEF task, emotional facial expressions were video-recorded. Skin conductance response (SCR) and electromyographic activity (EMG) in the corrugator, elevator and zygomaticus muscles were measured. Participants rated the authenticity, intensity, emotional arousal, and difficulty in producing their emotional expressions. Among 42 participants, we observed congruency effects in all measures, including self and other ratings and EMG, i.e., congruent conditions (e.g., happy-happy) were performed faster, with greater mimic intensity and emotional involvement than incongruent conditions (e.g., sad-happy). Additionally, the participants revealed different levels of interference by incongruent conditions. We will report the construct and incremental validities of the AEF-task, comparing the behavioral and psychophysiological effects with questionnaires about state emotions, cognitive flexibility, emotion reactivity, competence, regulation, flexibility, and general, depressive and anxiety-related psychopathology. Using this innovative AEF-task, the behavioral and psychophysiological measures supplement the subjective report of affective flexibility and may contribute substantially to the understanding of this highly relevant construct for mental health.

Strukturelle Veränderungen der Faserstruktur als neurobiologisches Korrelat kognitiver Symptome bei depressiven Störungen (14:30 – 16:00)

Susanne Meinert, *Institute for Translational Psychiatry, University of Münster, Germany*

Kognitive Defizite, welche sich häufig mit dem Fortschreiten der Erkrankung verschlimmern, tragen wesentlich zu Beeinträchtigungen bei, unter denen Patienten mit Depressionen (MDD) leiden. Trotz ihrer klinischen Relevanz sind die Mechanismen, die diesen kognitiven Beeinträchtigungen zugrunde liegen, unzureichend verstanden, was eine wirksame Behandlung behindert. Querschnittsstudien deuten darauf hin, dass Veränderungen in der Faserintegrität zu kognitiven Symptomen beitragen können. Diffusions-Tensorbildgebungsdaten (DTI), eine umfangreiche neuropsychologische Testbatterie und detaillierte klinische Diagnostik wurden für n=881 Teilnehmer (n=418 MDD, 36.7813.35 Jahre, 274; n=463 gesunde Kontrollpersonen [HC], 35.6013.48 Jahre, 295) mit einer 2-Jahres-Verlaufsmessung untersucht. Mittels linear mixed-effect models wurden Veränderungen der kognitiven Leistungsfähigkeit und der Faserintegrität zwischen MDD und HC verglichen. Es wurde untersucht, ob der depressive Krankheitsverlauf im Interscanintervall kognitive Symptome bei der Nachuntersuchung vorhersagte und ob die Faserintegrität diesen Zusammenhang mediierte. Ergebnisse: Patienten mit MDD zeigten unabhängig vom Zeitpunkt mehr kognitive Defizite als HC ($p<0.001$, $sr^2=0.032$). DTI-Analysen zeigten eine stärkere Abnahme der Faserintegrität über die Zeit bei Patienten mit MDD im Vergleich zu HC (ptfce-FWE=0.026, $sr^2=0.002$). Darüber hinaus war eine Zunahme der kognitiven Defizite in beiden Gruppen signifikant mit dem Verlust der Faserintegrität über die Zeit assoziiert (ptfce-FWE<0.001, $sr^2=0.003$). Veränderungen der Faserintegrität (p=0.003, beta=0.071) und ein ungünstiger depressiver Krankheitsverlauf (p=0.002, beta=-0.072) sagten unabhängig voneinander eine Zunahme kognitiver Beeinträchtigungen bei der Nachuntersuchung voraus. Diese prospektive Kohortenstudie zeigt eine Verschlechterung der Faserintegrität im Laufe der Zeit bei Patienten mit MDD. Darüber hinaus unterstreichen die Ergebnisse die entscheidende Rolle der Faserintegrität und des Krankheitsverlaufs bei

depressionsbedingten kognitiven Defiziten und machen beide zu prioritären Zielen für die zukünftige Behandlungsentwicklung.

Emotion Regulation Across Contexts: From Hormonal Modulation to Social Support and Interventions (14:30 – 16:00)

Morawetz, Carmen; Derntl, Birgit

Emotion regulation (ER) is crucial for psychological well-being, influencing daily life, relationships, and mental health. Deficits in ER contribute to disorders such as depression, bipolar disorder, and anxiety. Understanding its neural mechanisms can inform effective interventions to enhance emotional resilience.

This symposium features leading researchers and early career scientists exploring interconnected dimensions of ER:

1. Carmen Morawetz studies interpersonal emotion regulation strategies using fMRI, revealing a tendency to seek social support during intense emotions, which activates the ventromedial and lateral prefrontal cortex, indicating the neural basis of effective strategies.

2. Birgit Derntl investigates hormonal influences on ER in women, finding that estradiol levels affect brain connectivity, including the effects of oral contraception on ER network connectivity, contributing critical insights into women's mental health and ER.

3. Katharina Förster explores ruminative ER in young depression patients. Ruminative ER is correlated with increased amygdala and ventrolateral prefrontal cortex activity but diminished connectivity between these regions, indicating regulation challenges.

4. Philipp Kanske presents a training program that boosts positive emotions, like care and concern, to mitigate stress spread. Participants reported enhanced positive social affect when faced with others distress and increased cortical thickness in the anterior insular cortex, suggesting benefits for clinical groups under interpersonal stress.

5. Luca Lasogga examines how tDCS brain stimulation reduces aggressive and impulsive behavior by enhancing prefrontal area functionality. Several studies across patient groups were conducted to assess tDCS's effectiveness in controlling aggressive and impulsive responses, noting various influencing factors from methodology to individual differences factors.

Interpersonal Emotion Regulation: Affective Determinants and Neural Correlates (14:30 – 16:00)

Carmen Morawetz, *University of Innsbruck, Austria*

When individuals experience distress, they instinctively seek social support to regulate their emotions, a process known as interpersonal emotion regulation (interpersonal ER). This social sharing fulfills a fundamental need for connection, enhancing both psychological and physiological well-being. Despite its significance, the affective determinants guiding interpersonal ER remain underexplored. In this talk, I will present findings from two behavioral experiments that examine how stimulus intensity (high/low) influences the selection and implementation of ER strategies (distraction/reappraisal), both with and without social support (intrapersonal/interpersonal). Our results reveal a strong tendency for individuals to increasingly seek social support as the intensity of a negative stimulus rises, irrespective of the ER strategy employed. fMRI data further demonstrate heightened activity in the ventromedial and lateral prefrontal cortex, particularly during the selection and implementation of interpersonal ER. These findings suggest that interpersonal ER engages distinct neural mechanisms compared to intrapersonal ER. By integrating behavioral and neuroimaging evidence, this talk will provide insights into the mechanisms underlying interpersonal ER and its implications for

emotional well-being. Understanding these processes can inform therapeutic interventions and highlight the critical role of social connection in emotion regulation.

Steroids and Connectivity within/between Emotion Regulation Networks (14:30 – 16:00)

Birgit Derntl, *University of Tübingen, Germany; German Center for Mental Health, partner site Tübingen, Germany*; **Laura Gervais**, *University of Innsbruck, Austria*; **Carmen Morawetz**, *University of Innsbruck, Austria*; **Ann-Christin Kimmig**, *University of Tübingen, Germany; German Center for Mental Health, partner site Tübingen, Germany*

Emotion regulation (ER) is essential for psychological well-being, impacting daily life, relationships, and mental health. ER deficits contribute to disorders like depression, bipolar disorder, and anxiety. Understanding its neural mechanisms can guide effective interventions. Estradiol (E2) modulates emotion-related neural networks. Using resting-state fMRI, we examined whether E2 influences intrinsic network dynamics linked to ER. In naturally cycling females, E2 administration altered connectivity in ER and reactivity networks, with prefrontal connectivity predicting regulation ability. To explore hormonal influences further, we compared naturally cycling females to those on oral contraceptives (OC) and those starting or stopping OC. In the stopper group, declining synthetic hormones led to connectivity shifts, primarily inhibitory, with the central executive network increasing connectivity toward the default mode and salience networks. Findings highlight the role of steroids in ER and its potential for improving treatments of emotion-related mental disorders.

Altered Fronto-limbic Regulation in Adolescents and Emerging Adults Employing Habitual Rumination - a Neural Link to Early-onset Depression? (14:30 – 16:00)

Katharina Förster, *Universität Hamburg; Klinische Psychologie und Behaviorale Neurowissenschaft, Technische Universität Dresden*

Ruminative emotion regulation (ER) has been identified as a critical risk factor for early-onset depression. During adolescence and emerging adulthood, the neural emotion processing circuits undergo critical maturational changes. To understand the interplay between rumination and neural emotion processing in the context of early-onset depression, we conducted a longitudinal and preregistered neuroimaging study (https://osf.io/jmxyv). We investigated 61 right-handed participants, 28 MDD patients and 33 healthy controls (55 female, M = 36.14 years, SD = 13.29) with fMRI at baseline and after two years. During both fMRI sessions, participants underwent an affective priming task that assessed emotion processing of subliminally presented sad compared to neutral facial expressions. A group x time ANCOVA with rumination as covariate was performed for the amygdala and lateral prefrontal cortices as region-of-interest. We also explored task-based functional connectivity between the lateral prefrontal cortices and amygdala employing a PPI-analysis. We found main effects of ruminative ER on amygdala and vlPFC activity as well as an explorative group x rumination interaction on amygdala-vlPFC-connectivity: Elevated amygdala and vlPFC-activity were associated with increased ruminative tendencies in both, patients with MDD and HC. However, rumination was associated with increased amygdala-vlPFC-connectivity in healthy participants, in contrast to decreased connectivity in patients with MDD. Our longitudinal neuroimaging study revealed that increased emotional reactivity toward negative stimuli and increased effort to regulate this reactivity is associated with habitual rumination in young people with and without depression. Importantly, early-onset depression may lead to a dysfunction of this regulation effort, as indicated by the decreased functional connectivity in young patients with depression.

Positive Social Affect Training as Interpersonal Emotion Regulation (14:30 – 16:00)

Philipp Kanske, *Technische Universität Dresden, Germany*

Our social networks are source of resilience but can also transmit stress and psychopathology. This talk will present a positive social affect training that aims to counter stress transmission by increasing social emotions of care and concern. The results do indeed show post-training subjective increases in such positive social affect when confronted with other people under stress. They go along with increased cortical thickness in the anterior insular cortex. The training may be adapted to clinical populations experiencing higher levels of interpersonal stress.

Consequences of Transcranial Direct Current Stimulation on Aggression (14:30 – 16:00)

Luca Lasogga, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen University, Germany*; **Ute Habel**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen University, Germany; Institute of Neuroscience and Medicine: JARA-Institute Brain Structure Function Relationship (INM 10, Research Center Julich, Germany*; **Carmen Weidler**, *Department of Psychiatry, Psychotherapy and Psychosomatics, Faculty of Medicine, RWTH Aachen University, Germany*

Harm resulting from reactive aggression burdens both victims and society and is ineffectively addressed by current interventions. Non-invasive brain stimulation methods, such as transcranial direct current stimulation (tDCS), have shown promise in reducing aggression. Conventional anodal tDCS has been shown to modulate aggression but is thought to lack regional specificity. High-definition tDCS (HD-tDCS) offers higher precision in modulating neural excitability. Yet, the limited deployment of HD-tDCS leaves uncertainty about its effectiveness. Therefore, we investigated the effect of anodal HD-tDCS over the right inferior frontal gyrus (rIFG), which is associated with behavioral control, to mitigate reactive aggression. Thirty-nine healthy participants were randomly assigned to either anodal stimulation for 20 minutes of 1.5 mA or to sham stimulation. The electrodes were positioned according to the 10-20 system. The target electrode was placed on F6 surrounded by reference electrodes located at TP8, PZ, FC3 and FP1. Subsequently, participants played the Taylor Aggression Paradigm (TAP) against a fake opponent. We hypothesized that after active stimulation (compared to sham), participants chose lower punishment levels for their opponent. Our results showed no overall effect of HD-tDCS on aggressive behavior. However, an interaction between HD-tDCS and provocation level was observed, suggesting that participants receiving active HD-tDCS chose lower punishment in response to provocation compared to the sham group. In conclusion, anodal HD-tDCS over the rIFG was associated with lower reactivity to provocation.

Multicenter Studies in EEG Personality Research: Insights Into First Results of the CoScience EEG-Personality Project (14:30 – 16:00)

Kührt, Corinna

Researcher degrees of freedom and small sample sizes pose significant challenges to replicability in personality neuroscience. The CoScience EEG-Personality Project tackles these issues through an unprecedented large-scale, multi-laboratory effort (N ~ 800), bringing together ten research teams across Germany. All hypotheses were pre-registered and discussed in large collaborative teams to foster transparency and consensus building. To further enhance methodological rigor, the project employs cooperative forking path analysis (cFPA), a novel approach to systematically evaluate EEG preprocessing pipelines while limiting researchers' degrees of freedom. This symposium will present first results from four subprojects, share insights from this multi-site EEG collaboration, and discuss both the challenges and opportunities of large-scale, consensus-driven research.

First, Katharina Paul will examine the Late Positive Potential in response to erotic images (same- and opposite-sex individuals), while considering the influence of gender and menstrual cycle phase on affective processing.

Second, Corinna Kührt associates dispositional willingness to invest cognitive effort with neurophysiological correlates of effort exertion (frontal midline theta power, N2, and P3 amplitudes) in a flanker task.

Third, Philipp Bierwirth reports findings on the association between dispositional anxiety and brain-heart communication, assessed via the feedback-triggered N300H during a gambling task.

Fourth, Johannes Rodrigues discusses the importance of cognitive effort and control to overcome default behavior in the ultimatum game considering: Reaction time,

electrocortical correlates, and relevant traits

Fifth, Christoph Frühlinger will investigate the predictability of fluid and crystallized intelligence from resting-state EEG and assess the CoScience datasets integrity by replicating reported associations between state sleepiness and brain power.

LPP-Responses to Erotic Stimuli: Influence of Gender and Menstrual Cycle (14:30 – 16:00)

Katharina Paul, *University Hamburg, Germany*; **Aisha Munk**, *Justus-Liebig-Universität Giessen, Germany*; **André Beauducel**, *Universität Bonn, Germany*; **Johannes Hewig**, *Julius-Maximilians-Universität Würzburg, Germany*; **Andrea Hildebrandt**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Corinna Kührt**, *Technische Universität Dresden, Germany*; **Farina Mund**, *University Hamburg, Germany*; **Roman Osinsky**, *Osnabrück Universität, Germany*; **Anja Riesel**, *University Hamburg, Germany*; **Johannes Rodrigues**, *Julius-Maximilians-Universität Würzburg, Germany; Universität Bamberg, Germany*; **Christoph Scheffel**, *Technische Universität Dresden, Germany*; **Cassie Short**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Jutta Stahl**, *Universität zu Köln, Germany*; **Alexander Strobel**, *Technische Universität Dresden, Germany*; **Jürgen Hennig**, *Justus-Liebig-Universität Giessen, Germany*; **Jan Wacker**, *University Hamburg, Germany*

This study investigates gender differences in neural responses to erotic stimuli using the Late Positive Potential (LPP), an established EEG measure of emotional and motivational processing. Utilizing an extensive dataset from the multi-site CoScience EEG-Personality Project (N = 741), we examined the neural reactivity during a response matching task involving visual stimuli. Consistent with prior research, erotic images reliably elicited greater LPP amplitudes compared to non-erotic images, thus validating their motivational significance and salience. More notably, within this heterosexual sample men demonstrated significantly heightened LPP responses than women when viewing opposite-sex erotic images. Conversely, women exhibited somewhat larger LPP amplitudes to same-sex erotic images, consistent with theories suggesting greater sexual fluidity among women. These patterns were also reflected in subjective ratings, with women rating same-sex images as more positive and arousing than men. Modest effects of menstrual cycle phases on women's neural responses to erotic versus non-erotic images did not match expectations and were only observed in additional exploratory analyses. Furthermore, supplementary cooperative forking path analysis provided rich information on the robustness of these results. Overall, these results highlight the complexity of gender and hormonal influences on sexual responses, emphasizing the importance of large-scale studies for capturing subtle individual differences.

The Influence of Dispositional Cognitive Effort Investment on Actual Effort Exertion: A Large-Scale, Multi-Laboratory Examination (14:30 – 16:00)

Corinna Kührt, *TU Dresden, Germany*; **Alexander Strobel**, *TU Dresden, Germany*; **Christoph Scheffel**, *TU Dresden, Germany*; **André Beauducel**, *Rheinische-Friedrich-Wilhelms-Universität Bonn*; **Jürgen Hennig**, *Justus-Liebig-Universität Gießen*; **Johannes Hewig**, *Julius-Maximilians-Universität Würzburg*; **Andrea Hildebrandt**, *Carl von Ossietzky Universität Oldenburg*; **Erik Malte Mueller**, *Philipps-Universität Marburg*; **Roman Osinsky**,

Universität Osnabrück; **Katharina Paul**, *Universität Hamburg*; **Elisa Porth**, *Universität zu Köln*; **Anja Riesel**, *Universität Hamburg*; **Johannes Rodrigues**, *Julius-Maximilians-Universität Würzburg*; **Cassie Ann Short**, *Universität Hamburg*; **Jutta Stahl**, *Universität zu Köln*; **Jan Wacker**, *Universität Hamburg*

Individuals differ in their willingness and tendency to exert effortful control - a trait referred to as cognitive effort investment. The concept integrates the traits need for cognition, intellect, self-control and effortful control and predicts effort investment in goal-directed behavior. This study investigates the role of dispositional differences in cognitive effort investment during the processing of a flanker task. We focused on the effects on performance (i.e. reaction time, accuracy) and the amount of cognitive effort actually invested (i.e. frontal midline theta power, P3 and N2 amplitudes derived from EEG). Analyses of N ~ 780 participants reveal that differences between subjects explain 8 to 26 % of the variance. However, the results yield neither a main effect of cognitive effort investment nor an interaction effect between cognitive effort investment and demand. These results were robustly shown across the cooperative Forking Path Analysis (cFPA), i.e. independent of pre-processing and analytical choices. Data collection was distributed across ten different labs in Germany; data collection procedures were highly standardized (including material and training of experimenters). We will address how different sources of inter-laboratory variability influence the outcomes.

Dispositional Anxiety and Feedback-Triggered Brain-Heart Coupling (14:30 – 16:00)

Philipp Bierwirth, *Philipps-Universität Marburg, Germany*; **Erik M. Mueller**, *Philipps-Universität Marburg, Germany*

Communication between the brain and heart is generally adaptive. However, aberrant brain-heart coupling may contribute to pathological anxiety. This coupling can be assessed via the feedback-triggered N300H component, derived from EEG and ECG recordings. The N300H has been shown to be elevated in patients with panic disorder and to correlate with dispositional anxiety, making it a potential biomarker for anxiety in humans. However, the link between dispositional anxiety and brain-heart coupling has yet to be replicated. To address this, 662 participants were examined as part of the multi-laboratory Coscience project. EEG and ECG were recorded during a gambling task in which participants could win or lose money on each trial, and the N300H was quantified in response to feedback presentation. Dispositional anxiety was assessed using the Behavioral Inhibition Scale. Additionally, a cooperative forking path analysis (cFPA) was employed to test the robustness of the results across different preprocessing pipelines, thereby reducing researchers' degrees of freedom. Although a robust N300H was observed in response to feedback, no association between dispositional anxiety and the N300H was found. Moreover, results from the cFPA suggest that this null finding is independent of the chosen preprocessing pipeline. In sum, this study failed to replicate the previously reported association between dispositional anxiety and elevated brain-heart coupling. Potential reasons for this null finding and ways to bridge the gap between biological measures and personality traits will be discussed.

Good Things Come in Threes: The Influence of Cognitive Control and Cognitive Effort on Decision Making in a Large-scale Multi-site Ultimatum Game Study. (14:30 – 16:00)

Johannes Rodrigues, *Julius-Maximilians Universität Würzburg, Germany; Otto-Friedrich-Universität Bamberg, Germany*; **Johannes Hewig**, *Julius-Maximilians Universität Würzburg, Germany*; **André Beauducel**, *Rheinische-Friedrich-Wilhelms-Universität Bonn, Institut für Psychologie, Bonn, Germany*; Jürgen **Hennig**, *Justus-Liebig-Universität Gießen, Fachgebiet Psychologie, Gießen, Germany*; **Andrea Hildebrandt**, *Carl von Ossietzky Universität Oldenburg, Department für Psychologie, Oldenburg, Germany*; **Corinna Kührt**, *Technische Universität Dresden, Fakultät Psychologie, Dresden, Germany*; **Leon Lange**, *Universität Osnabrück, Institut für Psychologie, Osnabrück, Germany*; **Erik Malte Müller**, *Philipps-Universität Marburg, Fachbereich Psychologie, Marburg, Germany*; **Roman Osinsky**, *Universität Osnabrück, Institut für Psychologie, Osnabrück, Germany*;

Katharina Paul, *Universität Hamburg, Institut für Psychologie, Hamburg, Germany*; **Elisa Porth**, *Universität zu Köln, Fachbereich Psychologie, Köln, Germany*; **Anja Riesel**, *Universität Hamburg, Institut für Psychologie, Hamburg, Germany*; **Cassie Ann Short**, *Carl von Ossietzky Universität Oldenburg, Department für Psychologie, Oldenburg, Germany*; **Jutta Stahl**, *Universität zu Köln, Fachbereich Psychologie, Köln, Germany*; **Alexander Strobel**, *Technische Universität Dresden, Fakultät Psychologie, Dresden, Germany*; **Jan Wacker**, *Universität Hamburg, Institut für Psychologie, Hamburg, Germany*

Decision-making in social bargaining scenarios, such as the Ultimatum Game (UG), are influenced by the offer fairness, but also by dispositional traits and neurophysiological processes representing evaluation (feedback negativity: FRN) and cognitive effort and cognitive control to overcome default behavior (midfrontal theta: MFT). However, the importance of the evaluation of the offer (FRN) has often been prioritized lately to predict behavior. The present study investigated how offer fairness (high/middle/low), electrocortical correlates of cognitive effort / cognitive control (MFT) and offer evaluation (FRN) as well as individual differences in need for cognition (NFC) shape decision behavior and reaction time as a receiver in the UG. Data were collected as part of the CoScience EEG-Personality Project, a large-scale multi-site study comprising approximately 800 participants. As preregistered, more unfair offers led to more rejection behavior, reaction times were slowest in the middle offer category and rejections were linked to longer reaction times. Also, partly matching predictions, MFT was a better predictor than FRN for offer rejection, high MFT led to rejection and NFC was linked to rejection of low offers. These findings highlight the importance of the cognitive control and cognitive effort needed to overcome the behavioral default to accept all offers in the UG on several levels: Reaction time, electrocortical correlates of decision processes (MFT) and personality traits (NFC). They question fixation on outcome evaluation markers like FRN in the context of behavioral prediction.

Sleepiness but Neither Fluid nor Crystallized Intelligence Can Be Predicted from Resting-State EEG - Evidence from the Large Scale CoScience EEG-Personality Project (14:30 – 16:00)

Christoph Frühlinger, *Universität Hamburg, Germany*; **Katharina Paul**, *Universität Hamburg, Germany*; **Corinna Kührt**, *Technische Universität Dresden, Germany*; **Jan Wacker**, *Universität Hamburg, Germany*

Previous electroencephalogram (EEG) studies linked measures of spectral power under rest and fluid intelligence; however, subsequent high-powered studies challenged this relationship. The present study aimed to address previous limitations (low statistical power, lack of preregistration) and investigate the predictability of intelligence measures from resting-state EEG in the CoScience data set (N = 772). Support vector regressions were applied to analyze eight minutes of resting-state EEG with eyes open and closed before and after unrelated tasks. The decoding performance between the spectral power of 59 EEG channels within 30 frequency bins and fluid and crystallized intelligence, was evaluated with a 10-fold cross-validation. We could not identify any meaningful associations between resting-state EEG spectral power and either fluid or crystallized intelligence. However, we replicated the previously reported association between state sleepiness and theta power, attesting to the integrity of the CoScience data set. Furthermore, the decomposition of the EEG signal into its periodic and aperiodic components revealed that the aperiodic offset parameter is significantly correlated with state sleepiness, emphasizing the relevance of aperiodic signal components in understanding states of alertness versus sleepiness.

Coffee Break (16:00 – 16:30)

Decoding Credit Assignment: Insights into the Neural and Computational Mechanisms of Causal Inference (16:30 – 18:00)

Wurm, Franz; Spiering, Lisa

How do humans infer the causes and consequences of their actions in complex, uncertain environments? Effective decision-making depends on the ability to link outcomes to the actions or events that caused them. While this has been coined as causal inference in cognitive science, the field of machine learning refers to this ability as credit assignment.

This symposium combines computational modeling, behavioral experiments, neuroimaging, and patient studies to explore the mechanisms of credit assignment. First, Franz Wurm will discuss the importance of prediction errors and dopaminergic signaling and how a tonic manipulation via the dopaminergic precursor tyrosine affects successful credit assignment and surprise minimization. Jutta Peterburs will talk about how cerebellar dysfunction leads to impaired prediction error signaling and suggests weakened credit assignment and cognitive control during feedback and error processing. The credit assignment problem becomes especially acute in social situations with multiple agents and conflicting goals. Marco Wittmann will present insights on how abstract representations form fundamental building blocks for social-decision making and allow quick and accurate causal inference. André Forster presents EEG and computational modeling data exploring how individuals learn to distinguish between task difficulty and their capabilities in a competitive social situation. Lisa Spiering will discuss how people use behavioral flexibility to better assign outcomes to themselves versus others during cooperation and how these processes go awry in depression.

In conclusion, this symposium aims to bring together researchers studying decision-making, learning, social cognition, and those working at the intersection of machine learning, neuroscience, and clinical applications.

Exploring the Effects of Catecholaminergic Modulation on Credit Assignment: Behavioral, Computational and Neural Insights from a Tyrosine Administration Study (16:30 – 18:00)

Franz Wurm, *Leiden University, The Netherlands; Leiden Institute for Brain and Cognition, Leiden University, Leiden, The Netherlands*

The credit assignment problem arises when the link between causes and consequences is not directly observable. In a previous study we highlighted the central role of prediction errors (i.e., surprise) to establish a correct representation of environmental contingencies and thereby solve the credit assignment problem. As prediction errors have been closely linked to catecholaminergic responses, the current study asks if catecholaminergic modulation is not only involved in value learning but also drives structure learning and causal inference. Therefore, we administered a single dose of the catecholamine precursor tyrosine on our novel variant of the bandit task, using a double-blind, placebo-controlled between-subjects design (n = 48). We replicate basic behavioral, computational and neural findings, showing the robustness and reliability of the task design and computational approach. However, contrary to our expectations, first analysis suggest that tyrosine does not alter markers of credit assignment. On the behavioral level, neither hallmarks of implicit nor explicit credit assignment did differ between treatment groups. On the computational level, we find converging evidence for tyrosine's role in choice stochasticity/greediness but no indication of its impact on structure learning. While single-trial latent variable EEG analysis confirms the neural patterns of credit assignment, there is no evidence for catecholaminergic modulation. Taken together, these preliminary findings suggest that tyrosine impacts certain aspects of decision-making, but it does not appear to specifically influence credit assignment. We will further investigate baseline-dependent effects and discuss the role of tonic and phasic levels for value and structure learning.

Cerebellar Dysfunction Impairs Prediction Error Signaling in Reinforcement Learning - A Credit Assignment Problem? (16:30 – 18:00)

Jutta Peterburs, *MSH Medical School Hamburg, Germany*

Humans are extremely proficient in tracking the value of specific stimuli and adapting their behavior based on their reinforcement history. Herein, prediction errors (PEs), i.e., mismatches between actual and expected action outcomes, are critical. While processing of PEs in reinforcement learning (RL-PEs) has traditionally been linked to cerebral regions such as the striatum and anterior cingulate cortex, recent rodent data suggest that the cerebellum, which is typically associated with processing sensory PEs, also processes RL-PEs. In a series of EEG experiments with a probabilistic feedback learning task, we tested whether cerebellar output is necessary for cerebral RL-PE processing as reflected in the feedback-related negativity (FRN) in the event-related potential. In Experiment 1, 26 patients with chronic cerebellar stroke and 26 matched healthy controls were tested. In Experiment 2, single-pulse cerebellar transcranial magnetic stimulation (TMS) was applied in healthy participants (n=24), thus implementing a virtual lesion approach. No significant RL-PE processing was observed in the FRN in cerebellar stroke patients, and in healthy participants receiving cerebellar TMS. These results show that RL-PE processing in the forebrain depends on cerebellar output. Specifically, cerebellar PE signals appear to directly modulate reinforcement learning, with cerebellar dysfunction disrupting this gating signal, possibly leading to weakened credit assignment. Even though overall learning performance was preserved, reduced behavioral flexibility following cerebellar dysfunction can also be interpreted in the context of weakened credit assignment.

Self-Other Mergence and Information Compression in Prefrontal Cortex (16:30 – 18:00)

Marco K Wittmann, *University College London, United Kingdom*

Effective causal inference in social contexts requires tracking one's own actions and distinguishing them from others' actions. I will present a neuro-computational framework examining how the brain solves this credit assignment problem during social interactions, with particular focus on the phenomenon of "self-other mergence" where individuals fail to maintain distinct representations of self and other. Using neuroimaging, brain stimulation, and computational modelling, I will show both correlational and causal evidence that dorsomedial prefrontal cortex plays a critical role in calibrating self-other representations and managing appropriate credit assignment. I will present a broader theory suggesting medial prefrontal cortex accomplishes this by compressing information in social situations, creating abstract representations that serve as building blocks for efficient social decision-making and causal inference. Intriguingly, our model suggests self-other mergence - the apparent misattribution of actions to the inappropriate player - may not reflect a failure of learning mechanisms but rather emerges as a byproduct of this adaptive computational mechanism. The suggested information compression mechanism can enhance overall decision-making accuracy, albeit at the cost of occasionally blurred self-other boundaries when assigning credit for outcomes. This work suggests that abstract neural representations support adaptive decision-making and that credit assignment mechanisms should be contextualized within the broader social dynamics essential for navigating complex social environments with multiple agents and potentially conflicting goals.

Am I Smart, or Was the Task Easy? Electrophysiological and Computational Insights into Credit Assignment for Ability vs. Difficulty (16:30 – 18:00)

André Forster, *Julius Maximilians Universität Würzburg, Germany*; **Johannes Hewig**, *Julius Maximilians Universität Würzburg, Germany*

A key feature of many psychological disorders is a biased attribution style in which negative outcomes are attributed to internal, uncontrollable traits, while positive outcomes are considered the result of external, similarly uncontrollable factors. A fundamental problem with this maladaptive credit assignment is the distinction between one's own abilities and the demands/difficulty of a given situation. Once individuals develop the (potentially false) belief that they are incompetent, positive outcomes -rather than challenging this belief- may instead be interpreted as evidence that the task was just very easy. This may reinforce maladaptive self-concepts and prevent adaptive belief updating. This talk presents a gambling task designed to investigate this process. Participants competed against computer opponents by placing bets, winning if their offer exceeded that of their opponents. However, much like real-world situations, they could only decide how much effort to exert when placing their bet without knowing the actual amount they were betting. Similarly, their opponents' bets remained hidden. Crucially, participants overall ability fluctuated over time, influencing the (hidden) impact of their effort. This design allowed us to examine how individuals adjust their beliefs about their own ability versus their perception of opponent/task difficulty in response to changing win/loss outcomes at different effort levels. The study was conducted in two phases: an online pilot study that informed a computational modeling approach predicting participants' effort and their belief-updating, and an EEG-study of the same task testing electrophysiological correlates of model estimates and providing insight into the neural correlates of learning under uncertainty in credit assignment.

Perceived Cause and Controllability in Social Interactions and Their Neural Representations (16:30 – 18:00)

Lisa Spiering, *Department of Experimental Psychology, Wellcome Integrative Neuroimaging (WIN, University of Oxford, Oxford, UK*

A key human ability is to learn from outcomes by identifying their cause ("assigning credit"), and to figure out whether one's actions have any influence on our environment. In this study, firstly we examined the cognitive and neural mechanisms of how participants assign credit to themselves versus others and estimate their control over the environment. Secondly, we investigated how these processes can go awry in individuals with depressive symptoms. For this, we developed a novel behavioural paradigm, in which participants inferred from feedback how well they and another player perform, and how much control they exert. We employed this paradigm in a 3T fMRI study (n=50). Participants were recruited based on their depression scores, ranging from no to severe depressive symptoms. We found that to better disambiguate feedback, people engaged in exploratory behaviour (active disambiguation, AD). During AD, people changed their performance to test the effect of their behaviour on the feedback, thereby inferring their control. Activity in the supramarginal gyrus at the time of outcome was related to assigning feedback to estimating control from AD and tracking outcomes in an agent-based manner. Preliminary results indicate differences in how individuals assigned outcomes to themselves and others, related to depression symptoms. Next, we will examine the neural correlates of these interindividual differences. These findings may help develop new treatments for depression, such as non-invasive brain stimulation.

How Interoception Shapes Health and Disease via Social Stress and Loneliness: Revealing Underlying Mechanisms and Developing Novel Intervention Approaches. (16:30 – 18:00)

Schulz, Andre

Interoception, the processing and perception of signals from inside the body, affects how we experience and regulate social situations. For example, accurate interoception enhances the

regulation of negative emotions caused by social exclusion. Understanding the mechanisms underlying the impact of interoception on social interaction is essential, as their negative facets, such as social stress, social isolation, and loneliness are fundamental risk factors for mental disorders. First, we delineate how social stress and isolation are associated with interoception, with an emphasis on both physiological stress axes. André Schulz (Luxembourg) will present two studies on the impact of acute and chronic stress on interoception. Thereafter, Aleksandra Piejka (Leipzig) will show how loneliness is related to interpersonal distance and peripersonal space during social situations in virtual reality settings. Then, Miriam Kipping (Ulm) will address how social stress effects on gastric interoception shapes eating behavior. Second, we introduce three interventions to modify interoception. In two studies, Lisa Lai (Luxembourg) investigated the impact of transcranial magnetic stimulation (TMS) on the interoceptive brain network and social stress responsiveness. Finally, Carlos Ventura-Bort (Potsdam) will address how transcutaneous auricular vagus nerve stimulation (taVNS) and heart rate variability (HRV) biofeedback affect interoception and physiological stress axis activation. Our findings suggest a bi-directional effect between interoception and social stress/isolation in that stress may reduce interoception, but high interoception also helps to regulate the negative impact of social stress/isolation. TMS, taVNS, and HRV biofeedback were demonstrated as three intervention procedures that enhance interoception and, thereby, overcome negative consequences of social stress/isolation.

Acute and Chronic Stress Effects on Cardiac Interoceptive Signal Processing (16:30 – 18:00)

André Schulz, *Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg; Institute for Cognitive and Affective Neuroscience, Trier University, Trier*; **Silja Bellingrath**, *Division of Biological and Health Psychology, University of Duisburg-Essen, Essen, Germany*; **Annika Lutz**, *Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Lisa Maria Drost**, *Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*; **Robert Kumsta**, *Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg; Institute for Cognitive and Affective Neuroscience, Trier University, Trier*; **Claus Vögele**, *Department of Behavioural and Cognitive Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg*

Ascending and descending signals between the brain and the body are inherently connected. Interoception, the processing of signals from inside the body, is an example of ascending signal transmission, whereas stress is associated with descending signal transmission. Accordingly, first studies indicate that acute and chronic stress affects cardiac interoceptive accuracy (IAc). However, the impact of stress on other facets of interoception (interoceptive attention/IAt) remained unclear. Therefore, we investigated the impact of acute and chronic stress on cardiac IAc (heartbeat perception) and IAt (heartbeat-evoked potentials/HEPs). In Study 1, healthy individuals (N=66) underwent heartbeat counting tasks (HCTs) and distraction tasks (DTs) before and after a socially-evaluated cold pressor test (SECPT) vs. a control task, while HEPs were assessed. In Study 2, chronically-stressed schoolteachers (N=68) completed HCTs and DTs before and after an SECPT. Questionnaires and hair cortisol/dehydroepiandosterone (DHEA) served as measures of chronic stress. In healthy individuals, acute stress enhanced IAt (HEPs), but did not affect IAt (HCT). In contrast, chronically-stressed individuals showed a decrease of IAt (HEPs) after acute stress. They also reported fewer guessing strategies in the HCT after stress, whereas IAc was unchanged. Self-reported chronic stress was negatively associated with IAt, while hair cortisol/DHEA ratio negatively correlated with cardiac IAc. Hence, acute stress may increase IAt in a healthy state, which may turn into the opposite in states of chronic stress. IAc seems to be unaffected by stress, except for reporting strategies. These changes in interoception induced by stress may account for somatic symptom generation in stress-related diseases.

Loneliness and the Body: Parasympathetic Responses in Social Processing (16:30 – 18:00)

Aleksandra Piejka, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Consortium Epsilon**, *Charité - Universitätsmedizin Berlin; Fraunhofer Heinrich-Hertz-Institut; Tagesklinik Kognitive Neurologie, Universität Leipzig*

Loneliness, a perceived lack of social connectedness and support, has been recognized as a critical public health concern with significant implications for individual well-being. Extensive research has established loneliness as a major risk factor for various adverse health outcomes, including psychiatric disorders, cardiovascular disease, and all-cause mortality. Theoretical frameworks propose that the detrimental effects of loneliness on mental and physical health are fundamentally linked to two primary mechanisms: disrupted physiological responses to social stimuli and pervasive negative cognitive biases. Previous investigations have suggested that loneliness is associated with compromised integration of interoceptive trust signals in social situations, indicating a complex psychophysiological underpinning of social disconnection. Studies conducted by my research team has empirically demonstrated that experimental induction of loneliness can significantly decrease adaptive parasympathetic response, as measured by changes in heart rate variability (HRV) levels during social processing tasks. Moreover, we found that higher levels of loneliness are correlated with lower resting-state HRV in male participants. Currently, my research focuses on establishing comprehensive links between resting, task-related, and real-world HRV measurements and neuropsychological post-COVID symptoms within the broader context of loneliness. Additionally, I am developing a research protocol to investigate how loneliness relates to interpersonal distance and peripersonal space dynamics during social interactions, utilizing immersive virtual reality settings to examine both behavioral and physiological responses at multiple levels of analysis.

Individual Differences in Gastric Interoception Under Stress: Implications for Dysregulated Eating (16:30 – 18:00)

Miriam Kipping, *Ulm University*; **André Schulz**, *University of Luxemburg*; **Olga Pollatos**, *Ulm University*

The connection between eating behavior and both physical and mental health highlights the need to understand how eating behavior is regulated. Stress plays a significant role in shaping eating behavior, although its impact varies among individuals. To investigate the underlying mechanisms, we explored how acute stress influences gastric interoception - the ability to perceive stomach signals - alongside eating patterns and emotion regulation skills. A total of 94 sober adults participated in the study, completing both a stress-inducing task and a control task in separate laboratory sessions. Thereafter, gastric interoceptive sensitivity was measured with a new method - the Magic Table (MT). This consists of the consumption of yogurt from a self-refilling bowl until perceiving satiation and fullness. Additionally, a subset of participants underwent the Two-step Water Load Test (WLT-II), a well-established measure of gastric interoceptive sensitivity, in two additional laboratory sessions. The strong correlations between the gastric interoception indexes of the MT and the WLT-II support the MTs validity. Stress did not significantly change gastric interoceptive sensitivity. Nevertheless, participants with high but not low levels of emotion regulation difficulties, dietary restraint, and uncontrolled eating displayed reduced fullness sensitivity under stress compared to the control condition. These findings emphasize the role of gastric interoception in stress-related eating behaviors and highlight the necessity of interventions focusing on this mechanism for a subgroup of individuals at risk for dysregulated eating under stress. The implications will be discussed in the context of interoception-focused interventions, such as vagus nerve stimulation.

Tuning into the Heart: Theta Burst Stimulation of the Interoceptive Brain Network and Its Effects on Cardiac Interoception and Stress Responsiveness (16:30 – 18:00)

Lisa Lai, *University of Luxembourg, Luxembourg*; **Til Ole Bergmann**, *Neuroimaging Center, Mainz; Leibniz Institute for Resilience Research, Mainz*; **Claus Vögele**, *University of Luxembourg, Luxembourg*; **Marian Van der Meulen**, *University of Luxembourg, Luxembourg*; **Maike Aurich**, *Hopitaux Robert Schuman, Luxembourg*; **André Schulz**, *University of Luxembourg, Luxembourg; Institute for Cognitive & Affective Neuroscience, Trier*

Interoception plays a crucial role in emotional regulation, stress responses, and overall well-being. Despite growing interest in interoceptive processes, their neural mechanisms and plasticity remain insufficiently understood, especially regarding their modulation by brain stimulation and acute stress. This project investigates interoceptive plasticity by examining how Theta Burst Stimulation (TBS) and stress influence interoceptive accuracy (IAc) and interoceptive attention (IAt), two distinct aspects of interoception. IAc reflects the objective ability to perceive bodily signals, while IAt is assessed through the amplitude of heartbeat-evoked potentials (HEPs), which represent neural responses to cardiac signals at different time intervals. Two experimental studies were conducted. The first examined the effects of three TBS protocolsintermittent (iTBS), continuous (cTBS), and intermediate (imTBS)on IAc and IAt. Results showed that iTBS selectively enhanced IAt, as indicated by an increased HEPs interval, without affecting IAc, suggesting distinct neural mechanisms for these interoceptive dimensions. The second study investigated the impact of acute stress, induced by the Socially Evaluated Cold Pressor Task (SECPT), on interoception and whether TBS protocols influenced stress responsiveness. Acute stress was found to increase IAt (higher HEP amplitudes) but did not improve IAc, further supporting the dissociation between interoceptive attention and accuracy. A trend toward increased negativity of late HEPs was observed following cTBS. These findings highlight the dynamic nature of interoceptive plasticity, demonstrating that interoceptive processes can be selectively modulated by neuromodulation and stress, and underscore the potential of brain stimulation as a therapeutic approach.

New Ways to Sense the Heart: Effects of taVNS and Heart Rate Variability Biofeedback on Cardiac Interoception (16:30 – 18:00)

Carlos Ventura-Bort, *University of Potsdam, Germany*; **Marleen Dittrich**, *University of Potsdam, Germany*; **Mathias Weymar**, *University of Potsdam, Germany*

As interoceptive disfunctions have been proposed as vulnerability factors for psychopathological symptoms, there has been emerging interest in developing interventions to enhance interoceptive processing. This talk will present findings from two studies exploring the potential of cost-effective (neuro)modulation techniques - transcutaneous auricular vagus nerve stimulation (taVNS) and heart rate variability biofeedback (HRVBFB) - as methods to improve cardiac interoception. In the first study (N=53), we investigated the effects of taVNS on cardiac interoceptive accuracy and heart-evoked potentials (HEPs), using a within-subject, crossover design (taVNS vs. sham). Results showed that taVNS helped preserve interoceptive accuracy levels over time and elicited larger HEP amplitudes. We also found during taVNS, that HEP amplitudes mediated the positive relationship between interoceptive accuracy and HRV, a correlate of physiological adaptability. These findings suggest that taVNS may enhance cardiac signaling, thereby improving physiological regulation. The second study tested the effects of a HRVBFB on cardiac interoception, using a between-subject design. Preliminary data (N=45) confirmed the expected increase in HRV following HRVBFB. Mediation analysis further revealed that improvements in cardiac interoception were mediated by HRV increases, suggesting that enhanced physiological adaptability may support interoceptive processes. The final results (N=74) will be presented at the symposium. Together, these studies provide new insights into how interoceptive processing can be enhanced, offering potential pathways to improve mental health.

Exploring the Dynamics of Social Learning: Neural and Computational Approaches (16:30 – 18:00)

Saulin, Anne Christin; Hein, Grit

Social learning - the ability to acquire relevant knowledge, beliefs, or behaviors in the presence or context of others - is a fundamental human skill. Over the past decade, computational models of learning, with formal quantifications using mathematical equations and latent variables/parameters, have offered remarkable insights into both the behavioral and the neural foundations of this essential process. Today, these models in conjunction with bio-psychological methods help uncover the mechanisms underlying various complex social behaviors, underscoring the richness and versatility of this approach.

This symposium brings together scientists across different career stages from three countries (Austria, Germany, and UK) and three different universities (Universities of Vienna, Würzburg, & Birmingham) who investigate bio-psychological mechanisms of social learning in a variety of social contexts.

Our symposium explores Bayesian inference in a novel social learning task and its connection to autistic traits. (Bianca Schuster). Additionally, we examine the neural mechanisms underlying emotional and reward prediction errors in social transgressions (Lei Zhang). We will discuss how interactive gaze fosters closeness through learning (Julian Gutzeit), and a final presentation will highlight how financial incentives and empathy shape social behavior, integrating fMRI and reinforcement learning models (Anne Saulin).

Together, the presentations in this symposium provide a multidisciplinary perspective on the computational and neural mechanisms of social learning. Collectively, we will discuss and integrate these diverse methodologies and modelling approaches to illustrate how social learning models enhance our understanding of key social-cognitive processes and their role in different social contexts.

Examining Bayesian Inference in the Context of a Novel Social Learning Task (16:30 – 18:00)

Bianca Annkathrin Schuster, *University of Vienna, Austria*; **Nace Mikus**, *University of Vienna, Austria*; **Daniel Yon**, *Birkbeck University of London, United Kingdom*; **Lei Zhang**, *Birmingham University, United Kingdom*; **Claus Lamm**, *University of Vienna, Austria*

The social environment is inherently uncertain, requiring individuals to interpret ambiguous and noisy social cues. Hierarchical Bayesian inference, mathematically accounting for multiple levels of uncertainty, provides an optimal framework for investigating how social agents deal with such noisy information. Yet, few experimental studies have used Bayesian models to explicitly capture how individuals process social uncertainty. Moreover, although Bayesian theories of autism - proposing atypical integration of priors and sensory evidence - have become increasingly popular, findings are highly inconclusive. To examine how human agents take into account various sources of uncertainty while learning about others, we designed a novel social learning task wherein prior- and sensory uncertainty were manipulated. In this pre-registered study, 49 non-autistic participants were first presented with either ambiguous or unambiguous information about four fictional characters' risk proneness and subsequently predicted each character's bets in a gambling task, with feedback displayed at varying levels of sensory precision. Influences of autistic trait level on uncertainty processing were assessed using Autism Quotient (AQ) data. Analyses showed that participants did take into account the prior information and prior uncertainty: Modelling responses with the Hierarchical Gaussian Filter revealed higher belief volatility (ω) for high-, relative to low-uncertainty prior belief conditions. Contradicting prominent theories, higher autistic traits were associated with a stronger influence of prior belief uncertainty on initial learning. Our results suggest that individuals' propensity to learn about others depends on the uncertainty of their prior beliefs, and that those with higher autistic traits are more sensitive to this kind of uncertainty.

Distinct Neural Computations Scale the Violation of Expected Reward and Emotion in Social Transgressions (16:30 – 18:00)

Lei Zhang, *University of Birmingham, United Kingdom*

Traditional decision-making models conceptualize humans as adaptive learners utilizing the differences between expected and actual rewards (prediction errors, PEs) to maximize outcomes, but rarely consider the influence of violations of emotional expectations (emotional PEs) and how it differs from reward PEs. Here, we conducted a fMRI experiment (n = 43) using a modified Ultimatum Game to examine how reward and emotional PEs affect punishment decisions in terms of rejecting unfair offers. Our results revealed that reward relative to emotional PEs exerted a stronger prediction to punishment decisions. On the neural level, the left dorsomedial prefrontal cortex (dmPFC) was strongly activated during reward receipt whereas the emotions engaged the bilateral anterior insula. Reward and emotional PEs were also encoded differently in brain-wide multivariate patterns, with a more sensitive neural signature observed within fronto-insular circuits for reward PE. We further identified a fronto-insular network encompassing the left anterior cingulate cortex, bilateral insula, left dmPFC and inferior frontal gyrus that encoded punishment decisions. In addition, a stronger fronto-insular pattern expression under reward PE predicted more punishment decisions. These findings underscore that reward and emotional violations interact to shape decisions in complex social interactions, while the underlying neurofunctional PEs computations are distinguishable.

From Contact to Connection: How Gaze Interactions Build Closeness Through Learning (16:30 – 18:00)

Julian Gutzeit, *University Clinic of Würzburg, Germany; University of Würzburg, Germany*; **Lynn Huestegge**, *University of Würzburg, Germany*; **Jasper Bischofberger**, *University Clinic of Würzburg, Germany*; **Grit Hein**, *University Clinic of Würzburg, Germany*

Social gazing is a core form of nonverbal communication, with direct eye contact often linked to heightened closeness and trust. Recent research shows that impressions of others develop through repeated interactions, guided by learning processes. However, it remains unclear how repeated gaze interactions shape feelings of closeness and interaction partner preferences over time, and whether these dynamics are driven by reinforcement learning (RL). In our preregistered online study, n = 106 participants completed 100 trials in which they repeatedly chose one of two female interaction partners, each represented by a face image. The selected partner then either made eye contact or averted her gaze in response. Unbeknownst to participants, one partner made direct eye contact in 70% of the trials in which she was selected, while the other did so in only 30%. After each trial, participants rated how close they felt to each partner. As hypothesized, participants closeness ratings and preference for the partner that made eye contact more frequently increased over time. RL-models showed that direct gaze served as a social reward, driving preference formation through RL, although this reward experience was recalibrated for certain individuals, making eye contact less and averted gaze more rewarding. Importantly, latent Q-values from the best-fitting RL-model predicted trial-wise closeness ratings, suggesting that rewarding eye contact fosters social closeness over time. We discuss these findings in relation to individual differences such as social anxiety and personal dominance.

How We Learn to Be More Prosocial - or Not - Based on Empathy and Money (16:30 – 18:00)

Anne Saulin, *Adaptive Learning Psychology and Neuroscience Lab, Centre for Human Brain Health, School of Psychology, University of Birmingham*; **Grit Hein**, *Translational Social Neuroscience Unit, Department of Psychiatry, Psychosomatic, & Psychotherapy, University of Würzburg*

Prosocial behavior is the glue of society, yet its persistence depends on the underlying motivation - some drivers sustain it, while others fade quickly. We present two preregistered projects examining the persistence of prosocial behavior driven by empathy for pain (3 studies, https://osf.io/yz9rq/, N_{total} =104) or monetary incentives (3 studies, https://osf.io/4uvqj/, N_{total} =195) using model-based fMRI. In the empathy project, participants completed a baseline block of a binary dictator game, followed by a second block after frequent pain observations and a third after rare pain observations to assess persistence. The monetary incentives project used a reinforcement-learning (RL) approach: in the first block (acquisition), prosocial choices were rewarded (20 cents, 80% probability) whereas rewards were withheld in the second (extinction). Results showed prosocial behavior remained high across all blocks for empathy, while monetary incentives initially increased prosocial decisions, followed by a decline when payments stopped. Drift-diffusion modeling (DDM) revealed an increased predecisional prosocial bias after frequent pain observation, which persisted after observed rare pain. This parameter of the DDM was also linked to neural activation in the dorso-medial prefrontal cortex. When using money as prosocial motivation, preliminary combined RL DDM analyses suggest different learning mechanisms for when prosocial behavior was incentivized (acquisition) versus when rewards were removed (extinction). These differences may relate to neural activity in a network including the anterior cingulate cortex, striatum, and anterior insula. Together these projects shed light on via which neuro-behavioral mechanisms, different motivations can or cannot drive persisting prosocial behavior.

Schema Dependent Memory Formation: Cognitive and Neural Mechanisms (16:30 – 18:00)

Bunzeck, Nico

The integration of novel information into long-term memory can be promoted by presenting it within a known semantic context. For instance, acquiring new vocabulary in a foreign language is easier when it can be linked to pre-existing knowledge. This behavioral effect, also known as schema-dependent memory formation, has been demonstrated with various stimulus materials and across different species. Neurobiological models suggest that functional connectivity changes between the medial temporal lobe (MTL) and prefrontal cortex (PFC) promote the integration of novel information into existing knowledge structures, but several fundamental questions remain unresolved. This symposium aims to address these open questions by bringing together interdisciplinary research from both human and animal studies. More specifically, we will examine (a) the role of neurotransmitters, with a particular focus on dopamine, and their modulatory effects in the context of schema-dependent learning, (b) potential age-related changes, (c) the distinct neural mechanisms involved in encoding, consolidation, and retrieval, as well as (d) the interplay between novelty and prior knowledge. Taken together, the goal of this symposium is to discuss current views of schema-dependent memory formation, highlight its behavioral relevance across the adult lifespan and pinpointing underlying neural processes to refine future research.

Schema-Dependent Learning is Preserved Across the Adult Lifespan and Modulated by Prefrontal Dopamine (16:30 – 18:00)

Nico Bunzeck, *University of Lübeck, Germany*

When incoming information aligns with prior knowledge, it is processed, recognized, or recalled more efficiently. This phenomenon is known as semantic congruency effect and can be regarded as an example of schema-dependent learning. In this talk, I will present results from a series of behavioral and imaging experiments showing that, on a behavioral level, the congruency effect is well preserved in healthy older adults and modulated by dopamine. On a neural level, the congruency effect was associated with

hemodynamic activity within CA3, and this hippocampal subfield showed enhanced functional connectivity to the laterobasal amygdala. In a pharmacological fMRI study, the congruency effect was highest under placebo and significantly reduced by a dopamine agonist (1.25 mg bromocriptine) and dopamine antagonist (400 mg sulpiride). Compatible with this observation, subsequent memory effects in the left inferior frontal gyrus and its connectivity with the left substantia nigra and right nucleus accumbens, respectively, were also modulated by drug in a quadratic fashion resembling the behavioral pattern. Taken together, these findings give novel insights by suggesting that schema-dependent learning is preserved across the adult lifespan, and it is modulated by prefrontal dopamine and interconnected mesolimbic regions.

Hippocampal and Neocortical Contributions to Memory Updating in the Mouse HexMaze (16:30 – 18:00)

Alejandra Rocio Alonso Garrido, *Radboud University, The Netherlands*

Previous knowledge, structured as a cognitive map, facilitates knowledge acquisition and shapes the learning of new spatial information. The Mouse HexMaze, a novel behavioral task, enables the study of complex memory processes such as schema formation and updating. In this large (2m x 2m) environment, mice learn to navigate efficiently to a rewarded location over an extended period. When new information is integrated within an existing knowledge framework, memories become hippocampus-independent within 48 hours, as demonstrated by pharmacological inhibition of AMPA receptors. However, memory encoding in the presence of prior knowledge remains hippocampus-dependent. To investigate the persistence and reorganization of memory traces, we employed histological analysis using cFos-TRAP2 mice, enabling in vivo tagging of the initial memory engram. Comparisons between the original engram and cFos-expressing populations at two weeks and three months post-training revealed more than 50% overlap, suggesting that memory updating relies on the preexisting cortical representation as a scaffold. Despite pharmacological inhibition of the prelimbic and retrosplenial cortices separately, task performance remained unaffected, indicating the formation of a robust and distributed memory network.

The Assimilation of Novel Information into Schemata and its Efficient Consolidation (16:30 – 18:00)

Tobias Sommer-Blöchl, *Universitätsklinikum Hamburg-Eppendorf, Germany*

Prior knowledge in a given domain, often referred to as a schema, strongly influences how we encode and integrate novel information, even when that information is neutral with respect to schema-driven expectations (i.e., neither congruent nor incongruent). This assimilation has been attributed to more effective organizational processing, facilitating referential connections within the activated associative schema network. Animal studies suggest that the systems consolidation of such assimilated information is also accelerated. In two fMRI studies employing distinct schema operationalizations, we provide further evidence for these mechanisms and elucidate their neural underpinnings. Our findings consistently show enhanced vmPFC-hippocampus coupling during the encoding of schema-related information, supporting a prior-knowledge effect that is distinct from schema congruency or incongruency. Moreover, a combination of multivariate and univariate analyses highlights the contributions of the vmPFC, precuneus, and angular gyrus in the efficient encoding of schema-related information. Additionally, our results provide further evidence for the accelerated systems consolidation of novel, schema-related, and potentially assimilated information.

The Jamais-vu Phenomenon: A Temporary Schema Disruption Associated with Reduced Priming (16:30 – 18:00)

Judith Schomaker, *Leiden University, Netherlands, The*

Schema theory suggests that novel information consistent with an existing memory schema can be swiftly assimilated into existing memory structures, while novel information inconsistent with existing schema is more likely to be encoded as a new episodic memory trace. An interesting phenomenon that challenges schema theory is the jamais-vu experience, during which familiar information is temporarily experienced as novel. It can be induced by repeating information (e.g., words) for an extended period, after which familiar information starts to feel strange or unfamiliar, suggesting that jamais-vu is associated with a brief schema disruption. Previous work investigating this phenomenon has used subjective reports (e.g., often including reports of feelings of disconnectedness, or eeriness), but objective measures of the phenomenon are currently lacking. In the current study, we investigated the role of novelty and pre-existing schemas on the jamais-vu experience using an objective priming task in addition to self-report measures. The novelty of the environment, word repetition and the abstractness of the words (concrete nouns vs. abstract words like the) were manipulated in a virtual reality environment. Schema theory would predict more priming for words repeated in a familiar environment. In contrast, a novel environment induced more priming, suggesting that the schema disruption was lower in the novel compared to familiar context. Furthermore, chances were higher that individuals experienced jamais-vu in a familiar, rather than novel environment, especially when repeating new words. Taken together, our study suggests that the jamais-vu phenomenon challenges current schema theory, and could be leveraged to investigate conditions for schema-related memory.

From Local Circuits to Global States: Complementary Perspectives on the Neural Basis of Decision-making and Confidence (16:30 – 18:00)

Tune, Sarah; Nuiten, Stijn Adriaan

Understanding how the brain transforms often uncertain sensory evidence into a perceptual decision, and how confidence in that decision emerges, remains a core challenge in cognitive neuroscience. To fully explain how external inputs, prior expectations, and internal arousal shape perception and its subjective certainty across contexts and species, both local circuit mechanisms and global network states need to be considered.

This symposium brings together four complementary approaches that collectively disentangle bottom-up sensory and arousal influences from top-down expectation and learning factors. First, Stijn Nuiten demonstrates that humans and mice alternate between discrete and persistent behavioral states and that pupil-linked arousal and GABAergic activity in sensory regions jointly facilitate task-optimal state probability. Next, Alessandro Toso reveals distributed, competing accumulators in premotor and motor cortices that encode both decision speed and confidence, highlighting a link between the balance of competing neural signals and subjective certainty. Sarah Tune then explores how pharmacologically altering the cortical excitation-to-inhibition balance affects the integration of auditory signals and prior expectations in perceptual decision-making and metacognition. Finally, Monja Frobose focuses on how pharmacological inhibition of cholinergic transmission shapes learning and decision-making under uncertainty, demonstrating that processes of probabilistic inference and adaptive choice behavior depend on specific neuromodulatory mechanisms when the brain is challenged by volatile environments.

By combining diverse pharmacological, behavioral and analytic approaches, this symposium offers convergent insights into the neural algorithms that govern how evidence is acquired, weighted, and experienced in perceptual decision-making, metacognition, and learning.

Mid-level Arousal Facilitates Optimal Behavioral State in Humans and Mice (16:30 – 18:00)

Stijn A. Nuiten, *University Psychiatric Clinics (UPK, University of Basel, Switzerland*; **Matthijs Oude Lohuis**, *Champalimaud Foundation, Portugal*; **Anna-Chiara Schaub**, *University Psychiatric Clinics (UPK, University of Basel, Switzerland*; **Simon Van Gaal**, *Department of Psychology, University of Amsterdam, The Netherlands*; **Umberto Olcese**, *Amsterdam Brain and Cognition, University of Amsterdam, The Netherlands; Swammerdam Institute for Life Sciences, University of Amsterdam, The Netherlands*; **Cyriel M.A. Pennartz**, *Amsterdam Brain and Cognition, University of Amsterdam, The Netherlands; Swammerdam Institute for Life Sciences, University of Amsterdam, The Netherlands*; **Philipp Sterzer**, *University Psychiatric Clinics (UPK, University of Basel, Switzerland*; **Jan Willem De Gee**, *Amsterdam Brain and Cognition, University of Amsterdam, The Netherlands; Swammerdam Institute for Life Sciences, University of Amsterdam, The Netherlands*

Behavioral responses to sensory inputs are highly variable, even upon repeated presentations of an identical stimulus. Traditional behavioral analyses (e.g., Signal Detection Theory) assume that this variability stems from uncorrelated noise whose average magnitude is static over time. However, a recent insight, afforded by generalized linear hidden Markov models (GLM-HMMs), is that humans and rodents alternate between discrete and persistent behavioral states during perceptual decision-making. For example, experimental trials can be clustered in states of engaged, disengaged, and biased decision-making strategies. In mice, the probability of being in an engaged behavioral state exhibits an inverted-U relationship to baseline pupil size (a proxy of tonic arousal), consistent with the Yerkes-Dodson Law. By analyzing behavioral, pupil, and neural data from mice (N=9; audio-visual change detection task) and humans (N=69; auditory detection task), the current study investigated 1) whether this relationship generalizes to human participants and 2) what neural mechanisms it is governed by. Mice and humans alternated between several discrete behavioral states and engaged behavioral state probability exhibited an inverted-U relationship with baseline pupil-linked arousal. In mice, preliminary neural analyses further suggest that for visual change detection, this relationship was mediated by pre-change V1 firing rates of putative GABAergic interneurons but not putative pyramidal neurons. These findings imply a general mechanism by which arousal dynamically modulates the cortical state of a primary sensory region to optimize perceptual decision-making. This study furthermore highlights an important insight for neuroscientific research: perception is governed by discrete and persistent states of altered sensory processing.

Distributed Coding of Decision and Associated Confidence Across Competing Accumulators in the Human Cortical Motor System (16:30 – 18:00)

Alessandro Toso, *University Medical Center Hamburg- Eppendorf, Hamburg, Germany, Germany*; **Ayelet Arazi**, *University Medical Center Hamburg- Eppendorf, Hamburg, Germany, Germany*; **Konstantinos Tsetsos**, *School of Psychological Science, University of Bristol, United Kingdom*; **Tobias H. Donner**, *University Medical Center Hamburg- Eppendorf, Hamburg, Germany, Germany*

Neural circuit models of decision-making postulate that distinct populations of choice-selective neurons accumulate input signals supporting one versus another alternative. In this framework, the decision variable (DV) is encoded in a distributed (2-dimensional) fashion. It is unknown whether this distributed coding of DV predicts key aspects of decision-making. Here, we tested if distributed coding governs the confidence and reaction time (RT) associated with a choice. Human participants (N=20) performed a visual task during magnetoencephalography (MEG) recordings. In each visual hemifield, a stream of 10 samples (circular gratings) of fluctuating contrasts was presented. Participants reported the stronger side (left vs. right) and their confidence in that choice (high vs. low) by button press. We estimated the impact of evidence fluctuations on choice and confidence and fit accumulator models to both features. Moreover, we trained decoders to predict choices from patterns of source-level MEG signals in the dorsal premotor and primary motor cortex (PMd/M1) of each hemisphere. Choice and confidence reports were biased by evidence fluctuations across all samples. For choice this impact was symmetric for chosen and unchosen streams but dominated by the

chosen stream for confidence. Behavior was explained by a model of two competing leaky accumulators, racing to hit a collapsing bound. The output of PMd/M1 choice decoders built up during decision formation. Critically, RTs and confidence reports depended on decoder outputs from both hemispheres. Our results establish a distributed representation of decision states in the brain, whereby the balance between competing neural accumulators shapes RT and confidence.

Understanding How Prior Expectations and Neural Dynamics Shape Auditory Decision-making and Metacognition (16:30 – 18:00)

Sarah Tune, *University of Lübeck, Germany*

Perceptual decisions are rarely dictated by sensory input alone: prior expectations and internal neural states also influence how sensory evidence is encoded, weighted, and integrated over time. In my talk, I will present on two EEG studies which leveraged an adapted click train paradigm [Brunton et al. (2013)] to investigate how these processes jointly shape adaptive yet sometimes suboptimal auditory decision-making and metacognition. Participants listened to 1-sec trains of 20 clicks, randomly presented to either left or right ear, and judged which side received more clicks. Prior expectations were manipulated via probabilistic visual cues: For half of the trials, an informative cue indicated which ear was the more likely target side in a given trial. I will show how these expectations are integrated with ongoing sensory evidence, and how variability in pre- and peri-stimulus neural dynamics relates to decision performance and confidence. In the first study (N =32, 1833 yrs), prior expectations systematically biased perceptual decisions. Here, we asked in how far these biases can be explained by cue-driven as well as spontaneous fluctuations in neural dynamics modulating the analysis and integration of sensory evidence. In our second study (N =14, 1841 yrs), we pharmacologically perturbed cortex-wide neural dynamics to more directly probe how fluctutations in excitation-inhibition balance interact with prior expectations to guide both perceptual judgments and confidence. Collectively, I will show how global neural states and prior expectations shape the computations underlying perceptual decisions and metacognition.

Acetylcholine Affects Reward-Guided Learning under Uncertainty but not Reward-Guided Decisions in the Absence of Learning (16:30 – 18:00)

Hannah Kurtenbach, *Biological Psychology of Decision Making, Institute of Experimental Psychology, Heinrich Heine University Düsseldorf, Germany*; **Monja I. Froböse**, *Biological Psychology of Decision Making, Institute of Experimental Psychology, Heinrich Heine University Düsseldorf, Germany*; **Eduard Ort**, *Biological Psychology of Decision Making, Institute of Experimental Psychology, Heinrich Heine University Düsseldorf, Germany*; **Bahne H Bahners**, *Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany; Department of Neurology, Center for Movement Disorders and Neuromodulation, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany*; **Jan Hirschmann**, *Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany*; **Markus Butz**, *Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany*; **Alfons Schnitzler**, *Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany; Department of Neurology, Center for Movement Disorders and Neuromodulation, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany*; **Gerhard Jocham**, *Biological Psychology of Decision Making, Institute of Experimental Psychology, Heinrich Heine University Düsseldorf, Germany*

The neuromodulator acetylcholine has been suggested to both govern the rate of learning under uncertainty and to modulate neural circuits relevant for reward-guided choices irrespective of learning. To investigate the role of acetylcholine in decision making under uncertainty, we administered the muscarinic M1 receptor antagonist biperiden to participants performing a reward-guided decision-making task in the presence and absence of learning, and in volatile versus stable learning environments. Specifically, participants performed two tasks that involved choices between options

characterized by two attributes, reward probability and magnitude. In the gambling task, both attributes were explicitly provided, whereas in the learning task, reward probabilities had to be inferred from past experience. In addition, uncertainty was manipulated within the learning task by inclusion of a stable phase with fixed reward contingencies, and a volatile phase with frequent contingency reversals. Healthy male participants (n = 43) performed these tasks after administration of biperiden (4 mg) in a within-subjects, placebo-controlled design. Biperiden did not affect decision making in the gambling task, where no learning was required. However, in the learning task, biperiden reduced the sensitivity to the learnt reward probabilities. Notably, this was primarily driven by choices under higher uncertainty in the volatile phase. Using reinforcement learning models, we show that the change in behaviour was caused by noisier estimates of probabilities resulting from maladaptively increased learning rates under biperiden. Together, these findings suggest that muscarinic acetylcholine transmission is involved in controlling learning in highly uncertain contexts, when the demand for carefully calibrated adjustments is highest.

DGPs General assembly (18:00 – 19:00)

DGPA General assembly (19:00 – 20:00)

Friday, 20.06.2025

Keynote Lecture 2: Peter Dayan: Behavioural Modeling from the Beginning to the End (09:00 – 10:00)

A number of recent projects involve the collection of behavioural data from large numbers of subjects in carefully controlled cognitive circumstances. These offer an unprecedented opportunity to examine hitherto hidden aspects of the acquisition and maintenance of performance by individuals. I will describe two projects in which we have built descriptive models of the performance of more than 100 mice on a simple perceptual decision-making task. In the first, I will discuss our analysis of the long-run shaping and learning of the mice, from their very first choice to expert behaviour. This uses a non-parametric Bayesian model to separate the fast and slow changes that jointly characterize acquisition. In the second project, I will describe our use of a ladder of increasingly flexible and complex additions to a simple behavioural model in order to capture rich details of the asymptotic performance of the subjects. This shows subtle, but important, gaps in our original account.

Coffee Break (10:00 – 10:30)

IGOR Symposium: Open Science initiatives in biopsychological research (10:30 – 12:00)

Ocklenburg, Sebastian; Artemenko, Christina

In this IGOR symposium, we spotlight five open science initiatives in biopsychological research in short talks: First, the resource navigator ARIADNE will be introduced by Cagatay Guersoy (https://igor-biodgps.github.io/ARIADNE). ARIADNE was created to support researchers in the research process. It provides an overview of resources and a step-by-step guide on how to perform a research project in the field of biological psychology. Second, Maria Meier will introduce the Neuroendocrinology Open Data Exchange Standard (NODES) project that aims to facilitate data sharing in psychoneuroendocrinology. The first results of a Delphi study designed to reach an

expert consensus will be presented. Third, Yu-Fang Yang will outline that the reproducibility and robustness of results obtained by event-related potentials (ERP) vary with the EEG data preprocessing pipeline. She will provide an overview of recommendations and consequences of preprocessing choices. Fourth, psychophysiological measures often yield non-normally distributed data, prompting researchers to choose from various transformation procedures. Alina Koppold will present on the heterogeneity of data transformation and reporting standards and evaluate their impact on effect sizes and reliability. Fifth, the IGOR sustainability team will highlight how open science practices provide tools that critically contribute to sustainable neuroscientific research practices. Specifically, a comprehensive guide for integrating open science practices for sustainability at every stage of a research project will be presented. A final discussion by Mario Reutter and Maren Klingelhöfer-Jens will address the challenges in applying Open Science practices to the field of biopsychological research.

ARIADNE: A Scientific Navigator to Find Your Way Through the Resource Labyrinth of Psychological Sciences (10:30 – 12:00)

Helena Hartmann, *Clinical Neurosciences, Department for Neurology and Center for Translational and Behavioral Neuroscience, University Hospital Essen, Essen, Germany*; **Çağatay Gürsoy**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychology, Ruprecht Karl University of Heidelberg, Heidelberg, Germany*; **Alexander Lischke**, *Institute of Clinical Psychology and Psychotherapy, Medical School Hamburg, Hamburg, Germany; Department of Psychology, Medical School Hamburg, Hamburg, Germany*; **Marie Mueckstein**, *Department of General and Neurocognitive Psychology, International Psychoanalytic University Berlin, Berlin, Germany; Department of Psychology, University of Potsdam, Potsdam, Germany*; **Matthias F. J. Sperl**, *Department of Clinical Psychology and Psychotherapy, University of Giessen, Giessen, Germany; Center for Mind, Brain and Behavior, Universities of Marburg and Giessen (Research Campus Central Hessen, Marburg, Germany; Department of Clinical Psychology and Psychotherapy, University of Siegen, Siegen, Germany*; **Susanne Vogel**, *Department of Psychology, Medical School Hamburg, Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Hamburg, Germany*; **Yu-fang Yang**, *Division of Experimental Psychology and Neuropsychology, Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany*; **Gordon B. Feld**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, Ruprecht Karl University of Heidelberg, Mannheim, Germany; Department of Psychology, Ruprecht Karl University of Heidelberg, Heidelberg, Germany*; **Alexandros Kastrinogiannis**, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Alina Koppold**, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany*

ARIADNE is a living, interactive resource navigator and database (https://igor-biodgps.github.io/ARIADNE) created to help researchers, especially early-career ones, navigate the challenging research process in psychological science. Created to address the lack of comprehensive resource overviews in the field, ARIADNE particularly benefits early-career researchers who face challenges in conducting research. The open-access platform organizes resources across ten sequential research steps: from project initiation and study design, through data collection and analysis, to publication and dissemination. For each step, ARIADNE provides curated tools and resources that emphasize open-access and open-source options, thereby democratizing research capabilities across institutions and countries with varying resource access. The database serves dual functions: (1) offering a structured step-by-step guide for conducting research projects, initially focused on biological psychology and neuroscience but applicable to neighboring disciplines, and (2) presenting a searchable collection of practical resources for each research phase. By prioritizing open-science resources, ARIADNE promotes transparency, fairness, and reproducibility in psychological research while reducing the time-consuming and often frustrating aspects of experiential learning. Developed by members of the DGPs Interest Group for Open and Reproducible Science (IGOR), this navigator addresses common research challenges including resource fragmentation, comparison difficulties, and accessibility barriers. ARIADNE continues to evolve through

community contributions, ensuring its relevance and comprehensiveness as research practices and tools develop within psychological science.

Towards More Open Data in Psychoneuroendocrinology: Introducing the Neuroendocrinology Open Data Exchange Standard (NODES) Task Force (10:30 – 12:00)

Maria Meier, *Neuropsychology, Department of Psychology, University of Konstanz, Germany; Physiological Psychology, Department of Psychology, University of Bamberg, Germany*; **Nodes Task Force**, *Neuropsychology, Department of Psychology, University of Konstanz, Germany*; **Christiaan H. Vinkers**, *Department of Psychiatry, Amsterdam University Medical Centers Location Vrije Universiteit Amsterdam, The Netherlands; GGZ in Geest Mental Health Care, Amsterdam, The Netherlands; Amsterdam Neuroscience, Mood, Anxiety, Psychosis, Sleep & Stress Program, Amsterdam, The Netherlands; Amsterdam Public Health, Mental Health Program, Amsterdam, The Netherlands; Department of Anatomy and Neurosciences, Vrije University, Amsterdam, The Netherlands*; **Jens C. Pruessner**, *Neuropsychology, Department of Psychology, University of Konstanz, Germany; Centre for the Advanced Study of Collective Behaviour, University of Konstanz, Germany*; **Milou S.c. Sep**, *Department of Psychiatry, Amsterdam University Medical Centers Location Vrije Universiteit Amsterdam, The Netherlands; GGZ in Geest Mental Health Care, Amsterdam, The Netherlands; Amsterdam Neuroscience, Mood, Anxiety, Psychosis, Sleep & Stress Program, Amsterdam, The Netherlands; Amsterdam Public Health, Mental Health Program, Amsterdam, The Netherlands*

Sharing data openly conveys great potential for science, as it facilitates reproducibility and substainability. In the field of psychoneuroendocrinology (PNE), which investigates the links between hormones, behavior and health, sharing data openly is currently not common practice. We believe that this is partly because preparing hormonal data for publication can be time-consuming and challenging, as the correct interpretation relies on contextual factors and technical details of the data acquisition. At the moment, no standard data format in PNE has been established, thus complicating data sharing and reuse. The Task Force Neuroendocrinology Open Data Exchange Standard (NODES) aims to develop a community-driven standard data structure for PNE as well as supportive infrastructure, such as web applications that help restructuring and validating datasets and meta-data prior to publication. NODES intends to clearly define which information is necessary to correctly interpret PNE data while at the same time addressing related practical considerations like accessibility and compatibility. In a first step, a Delphi study will be conducted to reach an expert consesus regarding important open questions concerning the development of a standard data structure. The talk will introduce the NODES Task Force, present first results of the Delphi study and give an outlook on future milestones and plans.

Is There a Standard? An Umbrella Review of EEG Preprocessing Pipelines for ERP Studies (10:30 – 12:00)

Yu Fang Yang, *Freie Universität Berlin, Germany*; **Florian Bublatzky**, *Heidelberg University, Mannheim, Germany*; **Nastassja L. Fischer**, *Nanyang Technological University (NTU, Singapore*; **Kirsten Hilger**, *University of Würzburg, Würzburg, Germany*; **Laura-Isabelle Klatt**, *Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany*; **Alina Koppold**, *University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Louisa Kulke**, *University of Bremen, Bremen, Germany*; **Alexander Lischke**, *MSH Medical School Hamburg, Hamburg, Germany*; **Sebastian Ocklenburg**, *MSH Medical School Hamburg, Hamburg, Germany*; **Christian Panitz**, *University of Bremen, Bremen, Germany*; **Katharina Paul**, *University of Hamburg, Hamburg, Germany*; **Petunia Reinke**, *MSH Medical School Hamburg, Hamburg, Germany*; **Mario Reutter**, *University of Würzburg, Würzburg, Germany*; **Martin Weiß**, *University of Würzburg, Würzburg, Germany*; **Matthias F. J. Sperl**, *University of Siegen, Siegen, Germany; University of Giessen, Giessen, Germany; Universities of Marburg and Giessen (Research Campus Central Hessen, Marburg, Germany*

Event-related potentials (ERP) derived from EEG are widely used in cognitive and clinical neuroscience, yet there is no consensus on preprocessing pipelines. This lack of standardization creates a "Garden of Forking Paths", where analytical decisions influence data quality, comparability, and replicability. In recent years, numerous best-practice recommendations and methodological guidelines have emerged to address this issue. Given the growing number of these publications, our umbrella review synthesizes

systematic reviews, tutorials, and guidelines to identify common preprocessing practices, sources of variability, and the extent of standardization across different areas - assessing both its benefits and potential limitations for research quality and integrity. By evaluating these recommendations, we provide an overview of the current landscape of preprocessing guidelines and contribute to improving transparency and reproducibility in ERP research. We have completed preregistration and are now beginning the screening process.

From Raw to Refined: How Data Transformations Shape Effect Sizes and Reliability (10:30 – 12:00)

Alina Koppold, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Biological Psychology and Cognitive Neuroscience, Department of Psychology, University of Bielefeld, Bielefeld, Germany*; **Maria Bruntsch**, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Biological Psychology and Cognitive Neuroscience, Department of Psychology, University of Bielefeld, Bielefeld, Germany*; **Konstantin Döhr**, *Institute for Medical Psychology, University of Lübeck, Lübeck, Germany*; **Gordon Feld**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Marta Gerosa**, *Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Berlin School of Mind and Brain, Faculty of Philosophy, Humboldt-Universität zu Berlin, Berlin*; **Helena Hartmann**, *Clinical Neurosciences, Department for Neurology and Center for Translational and Behavioral Neuroscience, University Hospital Essen, Germany*; **Kirsten Hilger**, *Department of Psychology, Würzburg University, Würzburg, Germany*; **Valerie L. Jentsch**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Bochum, Germany*; **Alexandros Kastrinogiannis**, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Maren Klingelhöfer-Jens**, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Leon O. H. Kroczek**, *Department of Psychology, Clinical Psychology and Psychotherapy, Regensburg University, Regensburg*; **Tina B. Lonsdorf**, *Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Biological Psychology and Cognitive Neuroscience, Department of Psychology, University of Bielefeld, Bielefeld, Germany*; **Christian J. Merz**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Bochum, Germany*; **Robert Miller**, *Faculty of Psychology, Technische Universität Dresden, Dresden, Germany*; **Maria Meier**, *Department of Psychology, University of Konstanz, Konstanz, Germany; Child and Adolescent Psychiatric Research Department, University Psychiatric Clinics Basel (UPK, University of Basel, Switzerland*; **Mario Reutter**, *Department of Psychology, Würzburg University, Würzburg, Germany*; **Matthias F. J. Sperl**, *Department of Clinical Psychology and Psychotherapy, University of Siegen, Germany; Department of Clinical Psychology and Psychotherapy, University of Giessen, Germany; Center for Mind, Brain and Behavior, Universities of Marburg and Giessen (Research Campus Central Hessen, Germany*; **Christoph Szeska**, *Department of Biological Psychology and Affective Science, Faculty of Human Sciences, University of Potsdam, Potsdam, Germany*; **Carlos Ventura-Bort**, *Department of Biological Psychology and Affective Science, Faculty of Human Sciences, University of Potsdam, Potsdam, Germany*; **Susanne Vogel**, *Department of Psychology, Faculty of Human Sciences, Medical School Hamburg, Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, Medical School Hamburg, Hamburg, Germany*; **Yu-Fang Yang**, *Division of Experimental Psychology and Neuropsychology, Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany*

Psychophysiological measures are commonly used proxies for latent constructs in neuroscience. These measures often yield non-normally distributed data, prompting researchers to choose from various transformation procedures. However, there is limited understanding of transformation practices and their influence on statistical power and reliability across psychophysiological measures and analyses, as well as a lack of guidance for selecting appropriate transformations. The current project aims to (1) review the literature on transformation heterogeneity and reporting standards for multiple outcome measures (e.g., skin conductance, heart rate, electromyography) and (2) assess the impact of different transformation procedures on effect sizes and reliability using empirical and simulated datasets, in the field of human fear conditioning as a case example. Preliminary results emphasize the need for standardized reporting practices and reveal the complexity of transformation choices across measures. Specific transformations enhance reliability and effect sizes by reducing systematic error variance, highlighting the importance of methodological choices. The goal is to provide

researchers with a guide for selecting transformations, including test-specific statistical assumptions. The findings will contribute to improving reporting and transformation standards in neuroscience, enhancing robustness and replicability.

There is no Research on a Dead Planet - Fostering Ecologically Sustainable Open Science Practices in Neuroscience (10:30 – 12:00)

Sebastian Ocklenburg, *MSH Medical School Hamburg, Germany*; **Alina Koppold**, *Universität Bielefeld, Germany*; **Lara Puhlmann**, *Leibniz-Institut für Resilienzforschung Mainz, Germany*

The rapidly escalating climate crisis poses an existential threat to human wellbeing. Reducing anthropogenic greenhouse gas emissions must therefore become a primary goal of humanity. At the same time, advancing knowledge on human experience and behaviour through empirical research is likewise essential for wellbeing, but can incur substantial negative impact for the environment. Neuroscientific methods are particularly resource intensive and potentially harmful, from the carbon footprint of MRI scanners to the long-term impact of data centres keeping datasets permanently accessible for scientific reuse. This IGOR talk addresses the resulting tension between scientific research, open science principles, and responsible scientific stewardship in times of the climate crisis. We discuss how sustainable open science practices can be implemented in neuroscience at each step of the research cycle following the ARIADNE framework. Specifically, we suggest to (1) re-place new data with open data, (2) re-fine methods to make them more sustainable, and (3) re-duce carbon emission of testing by precisely determining sample sizes and research protocols beforehand.

Discussion: Future Directions of Open Science in Biopsychological Research (10:30 – 12:00)

Mario Reutter, *Experimental Clinical Psychology, Department of Psychology, University of Würzburg, Würzburg, Germany*; **Maren Klingelhöfer-Jens**, *Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany*

Most scientists agree that Open Science practices are beneficial for the quality of science by providing greater transparency, accessibility, and reproducibility. Yet, they are not as widespread as one might expect from this generally positive evaluation. This is partly because Open Science often involves extra work in practice, along with uncertainties and concerns that range from implementation issues, such as licensing and anonymization challenges, to personal worries about being scooped. In this interactive discussion, we want to gather what opportunities and challenges can be identified and what experiences, hopes, and reservations the audience holds towards Open Science in biological and neuropsychology. Subsequently, we will transfer these insights to the previous talks of the symposium. Finally, we will offer an overarching perspective based on the incentive structure currently attached to Open Science practices and highlight the importance of rewarding Open Science behavior with initiatives like the IGOR prize.

Psychophysiological Signatures of Flexible Behavioral Adaptation in Reinforcement Learning (10:30 – 12:00)

Tavacioglu, Ebru Ecem; Gamer, Matthias

The ability to flexibly adjust behavior in response to environmental changes is crucial for survival. This symposium will explore psychophysiological and computational mechanisms underlying expectation adaptation in reinforcement learning, integrating perspectives from both reward and threat learning. By leveraging eye-tracking, psychophysiology (e.g., EDA, ECG, pupil dilation, fMRI), virtual reality, and computational modeling, we aim to elucidate how individuals dynamically

update their expectations in changing environments and adjust their behavior accordingly.

The session will begin with Ecem Tavacioglu (University of Würzburg), who will present findings on whether attentional biases during fear acquisition and reversal learning are primarily driven by threat value, predictability, or uncertainty. Next, Ondrej Zika (Karolinska Institute & MPIB) will examine how trait anxiety influences the mechanisms of context-dependent learning in changing aversive environments. Building on these insights, Francesco Tortora (University of Würzburg) will explore how the intricate interplay between elemental and contextual representations in fear learning shapes physiology and behavior within a Virtual Reality (VR) environment. Shifting toward developmental and clinical perspectives, Lorenz Deserno (University Hospital Würzburg) will present research on how ADHD impacts on reversal learning and its neural correlates (fMRI) in childhood and adolescence and how this relates to psychostimulant treatment response. Finally, Florian Schlagenhauf (Charité Universitätsmedizin Berlin) will focus on goal-directed control in individuals with alcohol use disorder by investigating how reinforcement learning mechanisms contribute to maladaptive decision-making in addiction.

This symposium will provide a comprehensive multimodal perspective on the psychophysiological foundations of flexible behavioral adaptation, bridging fundamental research with clinical implications.

Threat, Attention, and Learning: Investigating Predictability and Bias in Fear Conditioning (10:30 – 12:00)

Ebru Ecem Tavacioglu, *University of Würzburg, Germany*; **Mario Reutter**, *University of Würzburg, Germany*; **Lea Hildebrandt**, *University of Würzburg, Germany*; **Matthias Gamer**, *University of Würzburg, Germany*

Threatening stimuli rapidly draw and sustain visual attention, yet it remains unclear whether this bias reflects inherent threat properties or the predictability of outcomes. Additionally, attentional exploration is shaped by learning that tend to favor more reliable predictors of upcoming events. To investigate the interplay between attention and learning during fear acquisition and reversal, we implemented a novel multiple-cue paradigm. Throughout the experiment, participants were presented with both single-cue and randomly interspersed multiple-cue displays. The single cues differed in how reliably they predicted an aversive electrotactile stimulus: reliable cues predicted threat and safety in 100% of the trials, respectively, and ambiguous cues were followed by the aversive stimulus on 50% of trials. In multiple-cue trials, ambiguous cues were shown alongside either threat or safety cues to examine whether attentional exploration is guided more by threat value or by the predictive strength of individual cues. Cue-outcome associations were initially learned during the acquisition phase and then reversed in the second half of the experiment to assess the flexibility of expectation updating (reversal learning). We collected eye-tracking data (e.g., first fixation latency, dwell time), trial-wise shock expectancy ratings, and autonomic responses. Participants flexibly adjusted their expectations to new contingencies; nevertheless, continued to exhibit a threat-related bias consistent with a better-safe-than-sorry strategy. Interestingly, gaze patterns were more sensitive to cue uncertainty, indicating that visual exploration may be more influenced by the unpredictability of outcomes. Ongoing reinforcement learning modeling will further clarify the relative contributions of threat value and outcome predictability in shaping attention and learning under changing aversive environments.

The Role of Trait Anxiety in Contextual Inference (10:30 – 12:00)

Ondrej Zika, *Max Planck Institute for Human Development, Germany; Karolinska Institute, Sweden; Bielefeld University, Germany*

Previous work has linked trait anxiety to increased context-dependent learning, a mechanism believed to underlie increased rates of return-of-fear in anxiety (Zika et al., 2023). However, whether this tendency reflects correct inference of complex contextual environments or whether it becomes maladaptive along the apathy-anxiety spectrum has

not been investigated. Here, we develop a novel contextual inference paradigm in which we manipulate the number of truly relevant contexts and assess whether anxious individuals tend to under- or over-estimate relevance of contextual information. The preliminary results indicate that participants are on average able to infer the true number of contexts (mean err = 0.34). We then link individual differences in contextual inference to a number of transdiagnostic dimensions (intolerance of uncertainty, anxiety, depression). Our preliminary results (N=18, target N=150) indicate that trait anxiety (TA) is associated with increased overall accuracy, r(17)=0.34, p<.05. Furthermore, high anxiety is associated with the correct number of contexts while low anxiety is associated with over-estimation of relevant contexts, r(17)=-0.22, p<.05. These initial results suggest that trait anxiety impacts the way individuals infer contextual information and provide a novel insight into how anxious individuals might deal with uncertainty.

The Interplay of Contextual Representations Shapes Physiological and Behavioral Defensive Responses: An Immersive Virtual Reality Study (10:30 – 12:00)

Francesco Tortora, *University of Würzburg*; **Daniel Gromer**, *University of Würzburg*; **Mario Reutter**, *University of Würzburg*; **Sabrina Gado**, *University of Würzburg*; **Marta Andreatta***, *University Hospital Tübingen*; **Matthias Gamer***, *University of Würzburg*

Flexibly adapting behavior in a constantly changing world is crucial for survival. Processing and integrating contextual information is pivotal for constructing a coherent understanding of the world, particularly in potentially dangerous situations. Animal research highlights the role of the interplay between an elemental and a conjunctive context representation (dual-process theory) in guiding behavior. Here, we examined how these representations interact to influence human defensive responses using a virtual reality-based fear conditioning paradigm. The virtual environment consisted of three distinctly furnished office settings, each containing the same two lamps (one yellow and one blue). First, participants explored the three offices (context encoding). Then, they were repeatedly teleported within the two. In each office, one lamp (e.g., yellow) was paired with an aversive stimulation, while the other lamp (e.g., blue) was not. Critically, contingencies were reversed across contexts (context-dependent acquisition). In the final phase (behavioral test), participants could freely re-explore the three offices. Subjective ratings, autonomic responses (skin conductance, heart rate and pupil dilation), movement trajectories and gaze behavior were recorded. Ratings, autonomic responses and gaze behavior showed successful context-dependent learning, indicating dominance of conjunctive representation. Slightly reduced responses in the office where contingencies were reversed however demonstrated an influence of elemental representation. Despite distinguishing the role of the contexts and the elements, participants adopted a better safe than sorry exploration strategy during the behavioral test keeping thus more distance from both lamps. These findings reveal how contextual representations dynamically shape human defensive states.

Reward-Based Flexibility in Typical Development and ADHD - Implications for Psychostimulant Treatment (10:30 – 12:00)

Lorenz Deserno, *University Hospital Würzburg, Germany*; **Anika Busch**, *University Hospital Würzburg, Germany*; **Hans Aster**, *University Hospital Würzburg, Germany*; **Maria Waltmann**, *University Hospital Würzburg, Germany*

Charting the maturation of flexible adaptation to changing action-outcome contingencies through the lens of reinforcement learning is key for developmental neuroscience and adjacent fields like computational psychiatry. We utilized different versions of reversal learning to examine (1) typical age-dependent development, (2) influence of an ADHD diagnosis and (3) the impact of the commonly prescribed psychostimulant methylphenidate. Using a task to separate motivational context and feedback valence, adolescence showed enhanced novelty seeking and response shifting especially after

negative feedback, which lead to poorer returns when reward contingencies were stable. Computationally, this was explained by reduced sensitivity to positive reinforcement. Activity in the medial frontopolar cortex reflecting choice probability was attenuated in adolescence. Adult and childhood ADHD patients performed worse than controls particularly in trials before reversals, when reward contingencies were stable. Computational modelling showed decreased sensitivity to any reinforcement. This was reflected in a diminished representation of choice probability in the left posterior parietal cortex in ADHD. Using a modified task including partial versus complete counterfactual feedback in a pharmacological challenge study, methylphenidate specifically strengthened the impact of previous outcomes on choice behavior only in the partial feedback condition. In line with this pharmacological manipulation, we find in longitudinal data on treatment response in childhood ADHD that similar behavioral and computational signatures change with treatment over time; however, this change was, in a preliminary sample, not differentiable from repetition effects in the control group. These studies highlight the potential to understand developmental and clinical trajectories through computational models of reinforcement learning.

Behavioral Control in Participants with Alcohol Use Disorder (10:30 – 12:00)

Milena Musial, *Charité - Universitätsmedizin Berlin, Germany*; **Erik Lukas Bode**, *Charité - Universitätsmedizin Berlin, Germany*; **Clarissa Grundmann**, *Charité - Universitätsmedizin Berlin, Germany*; **Claudia Ebrahimi**, *Technische Universität Dresden*; **Tanja Endrass**, *Technische Universität Dresden*; **Florian Schlagenhauf**, *Charité - Universitätsmedizin Berlin, Germany*

Alcohol use disorder (AUD) is characterized by persistent alcohol consumption despite negative consequences, often linked to a diminished capacity for goal-directed control. Within the Collaborative Research Center TRR265, we investigated how learning and decision-making processes relate to real-life drinking behavior in AUD. In Study 1, participants with AUD and healthy controls completed a probabilistic learning task using primary reinforcers (alcohol vs. juice) during fMRI. Both groups showed similar behavioral patterns and AUD participants displayed stronger striatal prediction error coding in the alcohol condition compared to controls. In Study 2, we examined whether goal-directed (model-based) behavior predicts individuals' ability to implement intentions to reduce alcohol use in daily life. Sixty-seven individuals with AUD completed a two-step task during fMRI and were followed for up to one year using ecological momentary assessment (EMA). Higher model-based behavior and stronger model-based neural signals in the hippocampus predicted more successful alignment of drinking behavior with self-reported intentions to reduce consumption. These findings highlight the ecological validity of computational markers of goal-directed control and suggest that individual differences in decision-making mechanisms influence self-regulation in AUD. Targeting goal-directed processes may inform personalized intervention strategies aimed at improving control over alcohol intake.

Neuropsychobiology of Aggression in Mental Disorders: a Presentation of the Transregio (TRR) 379 and its Partner Sites (10:30 – 12:00)

Bertsch, Katja; **Habel, Ute**

Aggression is frequent transdiagnostic phenomenon in mental disorders. Despite receiving a constantly high interest in public media, still little is known about the neuropsychobiological underpinnings of aggression in mental disorders and how this knowledge can be used to improve prediction, prevention, and treatment. The new transregio SFB 379 Neuropsychobiology of Aggression: a Transdiagnostic Approach in Mental Disorders aims at addressing these issues by combining innovative experimental neurobiological studies with prospective assessments in a large transdiagnostic sample of adolescents and adults. In this symposium, we will first introduce the research consortiums concept and primary goals (Katja Bertsch, JMU Würzburg) and then present

existing data from ongoing studies of the partner sites. These presentations include a talk by Ke Chen (ZI Mannheim) who will speak about lifespan normative modelling of aggression and individual risk profiling. Following this, Lisa Wagels (RWTH Aachen) will present transdiagnostic data of anger, hostility and aggression and Kornelius Kammler-Sucker & Christoph Korn (ZI Mannheim, University Hospital Heidelberg) will introduce a novel VR and online aggression learning paradigm eliciting anger. Finally, Nadine Steinbach (PhD student from University Hospital Frankfurt) will talk about the identification of mediators of threat-aggression and experimental manipulation by tDCS.

Introduction of the TRR 379 Neuropsychobiology of Aggression (10:30 – 12:00)

Katja Bertsch, *Universität Würzburg, Würzburg, Germany*; **Ute Habel**, *RWTH, Aachen University, Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*

Aggression is an evolutionary preserved behaviour, which includes the harm of another living being to protect, gain or defend something of value. Aggression is conceptualized as a multifactorial phenomenon. Complex neurocognitive and neurobiological pathways are assumed to mediate the multiple manifestations and thereby define aggressive biotypes. Many mental disorders are associated with an increased likelihood for aggression. In addition to the enormous negative social, socio-economic, and personal consequences, aggressive behavior in patients worsens treatment outcome. The transregio SFB 379 (TRR 379) "Neuropsychobiology of Aggression" aims at advancing our understanding of neurocognitive and neurobiological mechanisms and situational/environmental influences determining specific behavioral patterns of aggression in mental disorders. In this introductory talk, the aims, structure, and methods of the TRR 379 will be presented to set the ground for the following talks in which empirical data will be presented.

Lifespan Normative Modelling of Aggression and Individual Risk Profiling (10:30 – 12:00)

Ke Chen, *Zentralinstitut für Seelische Gesundheit, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm, Germany*; **Julia Ernst**, *Zentralinstitut für Seelische Gesundheit, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm, Germany*; **Tobias Banaschewski**, *Zentralinstitut für Seelische Gesundheit, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm, Germany*; **Nathalie Holz**, *Zentralinstitut für Seelische Gesundheit, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm, Germany*

Aims: Aggression varies across age and sex, yet there is a lack of studies utilizing large datasets to model aggression across the lifespan. This research aims to construct normative models of aggression and investigate risk factors linked to individual extreme aggression deviations. Methods: Using data from both publicly available datasets and in-house datasets including for instance at risk-cohorts such as MARS and clinical cohorts such as Aggressotype, we will analyse data from approximately 26,000 individuals aged 5 to 70. Aggression levels, assessed through both self-reported and other-reported measures, will be modelled using warped Bayesian linear regression to capture age-related trajectories. Individuals showing extreme deviations from normative patterns will be profiled based on risk factors identified in previous research. Results and Conclusions: Initial analyses indicate a decline in aggression from ages 5 to 10 in both sexes, with stability during adulthood. Males showed a slight increasing aggression trend after age 55. Ongoing analysis will be focused on refining the models and characterizing individuals with pronounced deviations to undercover their risk patterns. This study may enhance the understanding of aggression development across the lifespan and may provide insights on early identification and targeted interventions for high-risk individuals.

Transdiagnostic Data of Anger, Hostility and Aggression (10:30 – 12:00)

Lisa Wagels, *Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital RTWH Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*; **Laura Dukek**, *Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital RTWH Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*; **Vesal Moaiyed**, *Section of Epileptology, Dpt. of Neurology, Medical Faculty, RWTH Aachen University*; **Vanessa Murray**, *Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital RTWH Aachen, Germany*; **Salma Lamine**, *Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital RTWH Aachen, Germany*; **Ute Habel**, *Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital RTWH Aachen, Germany; JARA-Translational Brain Medicine, Aachen, Germany*; **Yvonne Weber**, *Section of Epileptology, Dpt. of Neurology, Medical Faculty, RWTH Aachen University*; **Stefan Wolking**, *Section of Epileptology, Dpt. of Neurology, Medical Faculty, RWTH Aachen University*

An important influencing factor for more frequent or intense aggression is the presence of a disease. Especially mental disorders are associated with heighted aggression. Additionally, side effects of medication may increase aggressiveness, e.g. in patients with epilepsy. Clinicians observed increased aggression for anti-epileptic drugs such as Levetiracetam, Breivaracetam, and Perampanel. Two studies on aggression in patient groups will be presented. In study one, patients with major depression (MDD), schizophrenia (SCZ), substance use disorder (SUD), personality disorder (PD), and healthy controls conducted three aggression tasks, reported about their emotions, and answered questionnaires on personality traits. In study two, patients with epilepsy who were taking either Levetiracetam, Brivaracetam, or Perampanel conducted the same paradigms in a 3 Tesla scanner assessing functional brain images. Patients with mental disorders reported higher aggression and impulsivity than controls. Behaviorally, mixed results showed enhanced reactivity towards social provocation in PD and overall enhanced aggression in SUD; MDD and SCZ reacted similarly as healthy controls. In the non-social provocation task, SCZ showed more blunted reactions towards provocation. Patients with epilepsy showed similar responses towards social and non-social provocation as controls, but brain activity during low and medium provocation was increased and patients showed a tendency towards reporting trait aggression. The studies show that aggression should be investigated as a multifaceted construct as behavioral and self-report data deviated in patient groups. The data on epilepsy patients does not support a heightened aggression level towards provocation. Both studies highlight that self-descriptions of patients are more negative compared to controls.

Competitive Behavior Elicits Anger in a Novel Aggressive Learning Paradigm - Convergent Evidence from VR and Online Versions (10:30 – 12:00)

Kornelius Kammler-Sücker, *Center for Innovative Psychiatric and Psychotherapeutic Research, Central Institute of Mental Health*; **Moritz Burghardt**, *Section Social Neuroscience, Department of General Psychiatry, Heidelberg University*; **Melissa Mohr**, *Center for Innovative Psychiatric and Psychotherapeutic Research, Central Institute of Mental Health*; **Sihui Zhang**, *Section Social Neuroscience, Department of General Psychiatry, Heidelberg University*; **Christoph W. Korn**, *Section Social Neuroscience, Department of General Psychiatry, Heidelberg University*

Aggression is a severe obstacle to joint success in social interactions. We developed a novel social learning task which measures aggression in the form of an active refusal of cooperation. This paradigm allows for the variation of multiple parameters like the computer players strategy and extends current PC environments by using immersive virtual reality (VR) which increases immersion and enables standardized yet engaging interactions with life-sized human-like avatars and even personalized doppelgangers. Participants interact with several virtual agents on grids to reach goals. Agents have distinct strategies to be either cooperative or competitive and participants starting positions on the grid are advantageous or disadvantageous for them. After each interaction, participants rate their anger about the agent. Two studies using an abstract online version (N = 30) and an immersive VR version (N = 57) yielded consistent results. Participants cooperation in the last trial of an interaction depended on the agent strategy in the previous trials. Participants cooperated less with competitive than with cooperative agents - an indicator of social learning and reactive aggression considering that cooperation is not costly in the paradigm. Accordingly, anger ratings for competitive

agents were higher than for cooperative agents. Additionally, physiological data (heart rate, respiratory rate, and eye tracking) was collected during the VR study and might provide further insights. In order to test reactions to non-cooperation, we have developed a new task that can be administered in an online and a VR version.

Identifying Mediators of Threat-Aggression and Experimental Manipulation by tDCS (10:30 – 12:00)

Nadine Steinbach, *Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt*; **Gwenn Dequatremare**, *Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt*; **Wolfgang Retz**, *Department of Psychiatry and Psychotherapy, University Medical Center Mainz*; **Michael Plichta**, *Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt*

Aggression is not only a major societal issue but also a common symptom in mental disorders such as ADHD and bipolar disorder (BD). Despite existing treatments, the demand for more precise, efficient and low-risk alternatives remains high. One promising option could be transcranial direct current stimulation (tDCS). Since acute stress increases the risk of aggression in aggression-prone individuals, we aim to explore the modulatory effects of cognitive control (CC) and negative valence (NV) in shaping aggressive responses. To this end, participants will undergo the stress-inducing Socially Evaluated Cold Pressor Test (SECPT), followed by comprehensive assessments of stress and aggression. Furthermore, an EEG task battery - including the Eriksen Flanker Task and the Monetary Incentive Delay Task - will measure event-related potentials linked to CC and frustrative non-reward (FNR), specifically error-related negativity (ERN), cue-P3, contingent negative variation (CNV) and feedback-related negativity (FRN). In 50% of participants, tDCS will be applied to determine whether aggression can be reduced by directly enhancing CC or by decreasing FRN as a secondary effect of improved top-down control.

Binding and Retrieval in Action Control: Neural Mechanisms and Metacontrol Dynamics (10:30 – 12:00)

Pastötter, Bernhard

The Binding and Retrieval in Action Control (BRAC) framework provides an important perspective on how past experiences influence future actions through event-file binding and retrieval. This symposium brings together EEG and fNIRS research to explore the neural and cognitive mechanisms underlying action control. Bernhard Pastötter examines the oscillatory correlates of event-file binding, showing that posterior alpha/beta desynchronization is linked to the integration of event-files, while alpha synchronization supports the maintenance of event files. Roula Jamous extends the BRAC framework by investigating how predictive processes influence both binding and retrieval, highlighting the role of sensory expectations in action control. Paul Wendiggensen explores the temporal dynamics of preparatory brain states, demonstrating that neurophysiological activity between trials affects subsequent event-file operations and providing insight into the time scales of binding effects. Christoph Geissler presents findings from combined fNIRS-EEG research on the involvement of the dorsolateral prefrontal cortex in action control, showing that binding effects depend on cognitive demands and task difficulty. Finally, Bernhard Hommel introduces a metacontrol framework, proposing that action control involves a dynamic balance between cognitive persistence and flexibility, regulated by cortical variability and neural noise. Together, these talks refine the BRAC framework by integrating neural oscillations, predictive coding, preparatory states, and metacontrol principles, offering a comprehensive perspective on how binding and retrieval shape adaptive behavior.

Alpha/Beta Oscillations Reflect the Formation and Short-Term Persistence of Stimulus-Response Bindings (10:30 – 12:00)

Bernhard Pastötter, *Trier University, Germany*; **Christian Frings**, *Trier University, Germany*

Stimulus-response bindings - temporary links between perception and action - are crucial for action control and adaptive behavior. In four experiments, we explored how brain activity supports the formation and short-term persistence of these bindings. Using EEG, we focused on alpha and beta oscillations around and after movement execution. Three experiments varied whether the stimulus was relevant or irrelevant, and how noticeable it was, to test when and how these bindings form and persist. The results suggest that alpha/beta activity before and after a response plays different roles: activity around movement execution (desynchronization) helps create the link, while post-response activity (synchronization) helps maintain it briefly. In a fourth study with patients with functional movement disorders, we found that overly persistent synchronization was linked to excessive, hard-to-break stimulus-response bindings, which interfered with flexible behavior. These findings offer new insights into how the brain balances persistence and flexibility on a moment-to-moment basis - and what happens when that balance is disrupted.

Neurophysiological Mechanisms Underlying Predictability Effects in Binding and Retrieval Processes (10:30 – 12:00)

Roula Jamous, *Cognitive Neurophysiology, Department of Child and Adolescent Psychiatry, Faculty of Medicine, TU Dresden, Germany*

Brains are prediction machines, continuously generating and evaluating predictions as an essential aspect of human cognition and behavior. Prediction processes are integral to perception-action integration frameworks, such as BRAC, emphasizing the prediction of action outcomes in response to sensory inputs. However, less attention has been given to predicting sensory inputs themselves before they are encountered. This raises critical questions: Do such predictions influence binding processes in anticipation of the input, and do they affect retrieval when the predicted input actually occurs or fails? Behaviorally, increased predictability is known to enhance performance, but the underlying neurophysiological mechanisms remain unclear. Our research addresses this gap by examining theta and alpha band activity and the associated cortical structures. We demonstrate that distinct patterns of neural oscillations and connectivity support the facilitation of performance under highly predictable conditions. These findings shed light on the proactive role of sensory prediction in shaping cognitive processes and neural dynamics.

Influences of the Immediate Past - Recurring Brain States and Their Relation to Binding and Retrieval (10:30 – 12:00)

Paul Wendiggensen, *TU Dresden, Germany*

The Binding and Retrieval in Action Control (BRAC) framework emphasizes how past actions or experiences influence current behavior. While the conceptual importance of the "immediate past" is central to the framework, the neurophysiological underpinnings of how these previous states influence binding and retrieval are poorly understood. The task-switching paradigm is a prominent example of how past actions influence current behavior. We have recently shown that pre-stimulus oscillations in the theta and alpha frequency ranges are associated with preparatory processes that subsequently influence binding and retrieval processes during action control. In a new EEG study with N = 50 participants, we varied the time frame available for preparatory processes between trials to delineate the time scales and neurophysiological patterns of recurrent brain states

preceding action control. These findings advance our understanding of both perception-action integration and recurrent brain states.

Hard Tasks Forge Strong Bindings (10:30 – 12:00)

Christoph Felix Geißler, *Trier University, Germany*; **Birte Moeller**, *Trier University, Germany*; **Lars-Michael Schöpper**, *Trier University, Germany*; **Christian Frings**, *Trier University, Germany*; **Bernhard Pastötter**, *Trier University, Germany*

In action control research it is assumed that actions and surrounding features have to be temporarily bound together to form action plans. Repeating any component of an event file retrieves all previously bound information, leading to performance costs for partial repetitions measured in so-called binding effects. Notably, although generally robust and stable, previous research has shown that binding effects are often reduced or completely absent in very easy or overlearned tasks. In a previous distractor-response binding study (Geissler et al. 2024) we employed functional near-infrared spectroscopy and could show that this reduction in binding effects is correlated to task-related processing in the dorsolateral prefrontal cortex. That is, stronger task-related processing went along with larger binding effects. However, due to temporal limitations in the distractor-response binding paradigm, we could not further pinpoint which component of task-related processing led to stronger binding effects. In a previous functional near-infrared response-response binding study (Geissler et al. 2021), we were able to clearly show neural binding effects in probe related dorsolateral prefrontal cortex activation. In the current study, we measured neural activity with functional near-infrared spectroscopy and electroencephalogram during a response-response binding paradigm with an easy target response mapping and a response-response binding paradigm with difficult target response mapping. Binding effects increased with task difficulty. This was reflected both in behavioral and neural measurements and confirms that task-difficulty directly influences how strongly bindings shape our behavior.

Metacontrol: The Yin and Yang of Cognitive Control (10:30 – 12:00)

Bernhard Hommel, *Shandong Normal University, Germany*

Traditional approaches to decision-making and action control assume the existence of a unitary control system that struggles with and serves to overcome misleading action tendencies. I present a metacontrol model that considers control as envisioned by the traditional model as only one side of the coin (the persistence side) that is useful for some tasks, whereas other tasks call for flexibility - the other side of the control coin. Here, I shall focus on the neurocognitive mechanisms underlying the balancing and implementation of metacontrol policies and discuss evidence from our lab suggesting that metacontrol operates by up- or down-regulating cortical variability and noise (as indicated by aperiodic EEG activity) to bias processing and response selection in particular towards flexibility and persistence, respectively.

It's never too late for LPP: Recent Advances from the Late Positive Potential as Electrophysiological Marker of Emotional Engagement (10:30 – 12:00)

Ventura-Bort, Carlos; Weymar, Mathias

The discovery of the late positive potential (LPP) in response to emotional pictures and reports of emotional arousal, indicating enhanced emotional engagement (Cuthbert et al., 2000), has significantly shaped electrophysiological research in affective science for the past two decades. In the present symposium we aim to synthesize the latest advances in LPP research and various fields of applications in associative learning, imagery, emotion regulation and perception. The first two

talks will present novel LPP findings on how initially neutral information can acquire emotional significance through associative mechanisms. Anne-Kathrin Schacht (University of Gottingen) will illustrate how these processes unfold in the visual domain, using both social and non-social events in younger adults. Next, Christian Panitz (University of Bremen) will present data from an imagery-based conditioning paradigm, investigating whether stimuli paired with aversive imagery evoke increased LPP amplitudes in children. The third talk by Kornelia Gentsch (University of Mainz) will offer new insights into how spontaneous, socially triggered emotion regulation shapes early and late appraisal processes across different sensory modalities (visual, auditory, olfactory). Finally, Carlos Ventura-Bort (University of Potsdam) will provide new perspectives on correspondence between LPP and self-reported measures. Using representational similarity analysis in an affective picture-viewing task, this talk will explore the trial-by-trial relationship between LPP amplitudes and various affect-related models, such arousal and valence. Taken together, our symposium will highlight the versatility of the LPP as a valuable electrophysiological marker of emotional engagement in psychological research and broaden its interpretation and application.

The Conditional LPP: It Takes the Proper Task to Turn Learning into Emotional Engagement (10:30 – 12:00)

Anne Schacht, *University of Goettingen, Germany*; **Annika Ziereis**, *University of Goettingen, Germany*

The late positive potential (LPP) is a robust electrophysiological marker of emotional engagement, typically studied in response to inherently emotional stimuli such as affective images or words. In two ERP studies (N = 40 and N = 37), we examined how emotional relevance, acquired through cross-modal associative learning, modulates late positive components during face perception. Neutral faces were paired with emotional vocalizations in a learning phase, followed by test phases in which only the faces were presented. In Study 1, participants explicitly learned individual face-voice pairings, while Study 2 employed incidental learning during a gender-matching task. Both studies used a cross-modal associative learning paradigm with a delayed test phase, allowing us to assess the consolidation and reactivation of learned affective relevance. EEG was recorded, along with behavioral responses and likability and valence ratings. LPP amplitudes were enhanced for faces previously associated with emotional (vs. neutral) voices - but crucially, only when emotional relevance was reinforced through task demands (Study 1). These late ERP modulations were paralleled by behavioral indicators of successful associative learning and increased likability. In contrast, an emotion-implicit task during learning and test did not elicit such effects. These findings underscore the importance of task context in driving LPP effects for learned relevance and reveal striking parallels to findings from inherently emotional stimuli, where late positivities benefit from explicit emotional evaluation. Together, the results highlight the flexibility of the LPP in indexing both inherent and acquired emotional salience, modulated by top-down task engagement.

Aversive Mental Imagery and the Late Positive Potential: Investigating Mechanisms of Fear Learning in Children (10:30 – 12:00)

Christian Panitz, *University of Bremen, Germany*; **Louisa Kulke**, *University of Bremen, Germany*

Childhood is a critical period for the development of persistent fears, yet some mechanisms underlying fear acquisition in the absence of real-life aversive experiences remain to be explored. This pre-registered study examined whether repeated mental imagery of aversive events can influence threat appraisal and conditioned psychophysiological responses in children. Using a novel imagery-based learning paradigm, children aged 7 to 10 imagined threatening and non-threatening encounters with different fictional animals. Landscapes, serving as conditioned stimuli, were subsequently paired with these imagery experiences. Valence and arousal ratings were collected for both animals and conditioned landscape stimuli, alongside late positive potential (LPP) data to assess a neural marker of emotional engagement. We hypothesized that children would rate animals and landscapes associated with aversive

imagery as more negative and arousing and that LPP amplitudes would be enhanced in response to threat-related stimuli. These findings will provide insight into the role of repeated mental imagery in childhood fear development and maintenance, with potential implications for early intervention strategies.

Appraisal and Emotion Regulation: Late Positive Potential Modulations in a Social Judgment Task (10:30 – 12:00)

Kornelia Gentsch, *Central Institute of Mental Health (CIMH, Germany*; **Ursula Beermann**, *UMIT Tirol, Austria*; **Lingdan Wu**, *University of Geneva, Schwitzerland*; **Stephanie Trznadel**, *University of Geneva, Schwitzerland*; **Klaus Scherer**, *University of Geneva, Schwitzerland*

Emotion-antecedent appraisal is widely recognized as a sufficient cause of emotional experiences. However, the extent to which appraisals can be modified via emotion regulation remains an open question. In everyday interactions, emotional regulation occurs spontaneously, influenced by social context - whether one is alone or in the presence of others. To examine the impact of emotion regulation on appraisal processes, we recorded event-related potentials (ERPs) during a social judgment task. Forty-eight right-handed healthy students (23 males, 25 females; M = 23 years, SD = 4.30) participated in the experiment. The task manipulated two types of appraisals: (1) intrinsic pleasantness, operationalized via exposure to pleasant and unpleasant stimuli across three sensory modalities (vision, audition, olfaction), and (2) goal conduciveness, varied through feedback indicating whether participants judgments aligned or conflicted with their task-related goal (judging correctly). Emotion regulation was examined by comparing two conditions: in one session, participants performed the task alone; in another, they completed the task while seated next to a confederate (an expert on emotion expression). We hypothesize that early appraisal processes (e.g., intrinsic pleasantness) are more resistant to regulation compared to later, goal-related appraisals. These effects are tested on the Late Positive Potential (LPP) as an index of motivated attention and emotional processing, and results will be presented at the symposium.

Investigating the Correspondence between Arousal and the Late Positive Potential using Representational Similarity Analysis. (10:30 – 12:00)

Carlos Ventura-Bort, *University of Potsdam, Germany*; **Pablo Ribes-Guardiola**, *University of Alicante, Spain*; **Pilar Segarra**, *University Jaume I, Spain*; **Victoria Branchadell**, *University Jaume I, Spain*; **Mathias Weymar**, *University of Potsdam, Germany*; **Rosario Poy**, *University Jaume I, Spain*

It is a well-established finding that the processing of high arousing events, compared to low arousing ones, is associated with a more pronounced Late Positive Potential (LPP)a positive slow wave, maximal at centro-parietal electrodes (from 300-800 ms). In this talk, we aimed at extending these findings by investigating the trial-by-trial correspondence between LPP amplitudes and subjective arousal and valence, using representational similarity analysis (RSA). In study 1 (N= 87), participants completed a passive picture viewing task (30 pleasant, 30 unpleasant and 30 neutral IAPS images) while EEG was recorded. Afterward, they rated the images based on arousal and valence. Replicating prior research, highly arousing images elicited larger LPP amplitudes than neutral ones. However, RSA revealed no clear association between the representational structure of the LPP and subjective arousal or valence. Instead, by testing different models the best fit was observed when distinguishing the most salient content (evoking the largest LPP) from the remaining contents (Salience model). In study 2, attentional focus was manipulated, instructing participants to either focus on emotional (affective category) or non-emotional (surrounding frame) aspects of the images (60 pleasant, 60 unpleasant and 60 neutral IAPS images) while EEG was collected. Preliminary analysis (N=40) revealed that the Salience model again best explained the LPP representation, especially when the affective categories were relevant to the task. Overall, our results suggest that the LPP

may not necessarily encode subjective affect but similar to the P300 rather the processing of salient contents, which is also modulated by top-down processes.

Lunch Break (12:00 – 13:00)

IGOR Roundtable (12:00 – 13:00)

Poster Session B with Coffee Break (13:00 – 14:30)

B 142 - Ambient Temperature Is Associated with Physiological Reactivity to Psychosocial Stress (13:00 – 14:30)

Susanne Vogel, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg - University of Applied Sciences and Medical University; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University*; **Kim L. Fricke**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg - University of Applied Sciences and Medical University; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University*; **Marie-christin Barthel**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg - University of Applied Sciences and Medical University; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University*; **Markus Muehlhan**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg - University of Applied Sciences and Medical University; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University*; **Ulf Baumgaertner**, *ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University; Medical Faculty, MSH Medical School Hamburg - University of Applied Sciences and Medical University*; **Nina C. Alexander**, *Department of Psychiatry and Psychotherapy, Philipps University Marburg; Center for Mind, Brain and Behaviour, Philipps University Marburg*

B 143 - Beyond the Mean: Exploring the Impact of Voice Variability on Identity Recognition (13:00 – 14:30)

Carina Ufer, *University of Medical Center Hamburg-Eppendorf, Germany*; **Helen Blank**, *University of Medical Center Hamburg-Eppendorf, Germany; Research Center One Health Ruhr of the University Alliance Ruhr; Ruhr-Universität Bochum*

B 144 - Eye Movements During Contextual Fear Conditioning, Extinction, And The Renewal Effect (13:00 – 14:30)

Lianne N. Wolsink, *Ruhr University Bochum, Germany*; **Oliver T. Wolf**, *Ruhr University Bochum, Germany*; **Christian J. Merz**, *Ruhr University Bochum, Germany*; **Valerie L. Jentsch**, *Ruhr University Bochum, Germany*

B 145 - Decision-making in Structured Environments (13:00 – 14:30)

Yuheng Shi, *Würzburg University, Germany*; **Leonardo Pettini**, *Max Planck School of Cognition, Leipzig, Germany; Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Humboldt-Universität zu Berlin, Berlin, Germany*; **Lorenz Deserno**, *Department of Child and Adolescent Psychiatry, Psychotherapy and Psychosomatics, Universitätsklinikum, Würzburg, Germany*; **Paul Sharp**, *Bar-Ilan University, Department of Psychology, Israel*; **Mona Garvert**, *Würzburg University, Germany*

B 146 - Impact Of Facial Ambiguity on Prosocial Behaviour and Moderation Effects of State-empathy (13:00 – 14:30)

Kartik Rai, *Universitätsklinikum Würzburg, Germany; Universität Würzburg, Germany*; **Julian Gutzeit**, *Universitätsklinikum Würzburg, Germany; Universität Würzburg, Germany*; **Grit Hein**, *Universitätsklinikum Würzburg, Germany*

B 147 - Mirror, mirror on the wall - what are the best fitting pictures of them all? Introducing a Curated Image Database for Emotion Research (13:00 – 14:30)

Nils Wehner, *University of Innsbruck, Austria*; **Carmen Morawetz**, *University of Innsbruck, Austria*

B 148 - Beyond Diagnosis: A Longitudinal, Better-Than-Expected Approach to the Neural Correlates of Resilience (13:00 – 14:30)

Vincent Hammes, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Katharina Brosch**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany; Institute of Behavioral Science, Feinstein Institutes for Medical Research, Manhasset, NY, USA*; **Paula Usemann**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Friederike David**, *Institute of Human Genetics, University of Bonn, School of Medicine & University Hospital Bonn, Bonn, Germany*; **Frederike Stein**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Florian Thomas-odenthal**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Lea Teutenberg**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Susanne Meinert**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Kira Flinkenflugel**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Janik Goltermann**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Julia Hubbert**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Tiana Borgers**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Judith Krieger**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Elisabeth J. Leehr**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Linda M. Bonnekoh**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany; Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University of Münster, Schmeddingstraße 50, 48149 Münster*; **Dominik Grotegerd**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Tim Hahn**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Benjamin Straube**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Hamidreza Jamalabadi**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Udo Dannlowski**, *Institute for Translational Psychiatry, University of Münster, Albert-Schweitzer-Campus 1, Building A9a, 48149 Münster, Germany*; **Igor Nenadić**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Robert Miller**, *Psychological Methodology, Psychological University Berlin, Am Kollnischen Park 2, 10179 Berlin*; **Andreas Jansen**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany; Core-Facility BrainImaging, Faculty of Medicine, Philipps-Universität Marburg, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany*; **Tilo Kircher**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8,*

35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany; **Nina Alexander**, *Department of Psychiatry and Psychotherapy, Philipps-Universität Marburg and University Hospital Marburg, UKGM, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behavior (CMBB, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*

B 149 - How Stable Are Aging Effects In ERPs Over Years? (13:00 – 14:30)

Edmund Wascher, *Leibniz Research Centre for Working Environments and Human Factors, Germany; German Center for Mental Health (DZPG, partner site Bochum/Marburg, Germany*; **Patrick Gajewski**, *Leibniz Research Centre for Working Environments and Human Factors, Germany*; **Stefan Arnau**, *Leibniz Research Centre for Working Environments and Human Factors, Germany*; **Daniel Scheider**, *Leibniz Research Centre for Working Environments and Human Factors, Germany*; **Stephan Getzmann**, *Leibniz Research Centre for Working Environments and Human Factors, Germany*

B 150 - An Experimental Investigation on the Effects of Music Selection and Gender on Cold Pressor Pain and Stress Responses (13:00 – 14:30)

Rosa M. Maidhof, *Translational Social Neuroscience Unit, Department of Psychiatry, Psychosomatics and Psychotherapy, Center of Mental Health, University Hospital Würzburg, Würzburg, Germany*; **Alexandra Wuttke**, *Department of Psychology, Clinical Psychology and Psychotherapy of Older Age, University of Konstanz, Konstanz, Germany*; **Mattes B. Kappert**, *Music and Health Lab, Faculty of Psychology, University of Vienna, Vienna, Austria*; **Andreas R. Schwerdtfeger**, *Department of Health Psychology, Institute of Psychology, University of Graz, Graz, Austria*; **Gunter Kreutz**, *School of Linguistics and Cultural Studies, Institute of Music, Carl von Ossietzky University of Oldenburg, Oldenburg, Germany*; **Urs M. Nater**, *Department of Clinical and Health Psychology, Faculty of Psychology, University of Vienna, Vienna, Austria; University Research Platform "The Stress of Life (SOLE - Processes and Mechanisms underlying Everyday Life Stress", University of Vienna, Vienna, Austria*

B 151 - Neurocognitive Correlates of Socio-Political Attitudes (13:00 – 14:30)

Sebastian Enghofer, *MSB Medical School Berlin, Germany*; **Sie-Youn Lee**, *MSB Medical School Berlin, Germany*; **Mareike Schügner**, *MSB Medical School Berlin, Germany*; **Lars Michael**, *MSB Medical School Berlin, Germany*

B 152 - A Memory Process Dissociation for the Representation of Action-Effect Relations (13:00 – 14:30)

Marcel Raphael Schreiner, *University of Würzburg, Germany*; **Wilfried Kunde**, *University of Würzburg, Germany*

B 153 - Between Signal and Knowledge: Understanding the Drivers of Lexical Bias in Speech Perception (13:00 – 14:30)

Andreja Stajduhar, *Department of Psychology, University of Lübeck, Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*; **Nele Pfitzner**, *Department of Psychology, University of Lübeck, Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*; **Lisa Unger**, *Department of Psychology, University of Lübeck, Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*; **Jonas Obleser**, *Department of Psychology, University of Lübeck, Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*; **Sarah Tune**, *Department of Psychology, University of Lübeck, Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*

B 154 - Brain Anatomy and Molecular Signaling Predict Neurophysiological Dynamics (13:00 – 14:30)

Christina Stier, *Institute for Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*; **Niels K. Focke**, *Clinic of Neurology, University Medical Center Gottingen, Germany*; **Joachim Groß**, *Institute for Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*

B 155 - Replay Detection Methods For fMRI and MEG: A Comparison (13:00 – 14:30)

Simon Kern, *Zentralinstitut für seelische Gesundheit, Mannheim; Institut für Psychologie, Universität Heidelberg*; **Lennart Wittkuhn**, *Institut für Psychologie, Universität Hamburg*; **Gordon Feld**, *Zentralinstitut für seelische Gesundheit, Mannheim; Institut für Psychologie, Universität Heidelberg*; **Nico Schuck**, *Institut für Psychologie, Universität Hamburg*

B 156 - Investigating the Role of Efficacy and Reward on the Allocation of Cognitive Control Across Age (13:00 – 14:30)

Solvejg Kassandra Kleber, *Department of Psychology, Julius-Maximilians-Universität Würzburg, Würzburg, Germany; Department of Child and Adolescence Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; Collaborative Research Centre 940: Volition and Cognitive Control, Dresden University of Technology, Germany*; **Johanna Kratz**, *Department of Child and Adolescence Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany*; **Romy Frömer**, *The Centre for Human Brain Health (CHBH, University of Birmingham, UK*; **Mahalia Prater Fahey**, *Cognitive, Linguistic, and Psychological Sciences, Brown University, Providence, RI, USA; Carney Institute for Brain Science, Brown University, Providence, RI, USA*; **Amitai Shenhav**, *Cognitive, Linguistic, and Psychological Sciences, Brown University, Providence, RI, USA; Carney Institute for Brain Science, Brown University, Providence, RI, USA*; **Ben Eppinger**, *Collaborative Research Centre 940: Volition and Cognitive Control, Dresden University of Technology, Germany; Developmental and Educational Psychology, University Greifswald, Germany*; **Theresa H. Mckim**, *Department of Child and Adolescence Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; Collaborative Research Centre 940: Volition and Cognitive Control, Dresden University of Technology, Germany; Department of Biology and Institute for Neuroscience, University of Nevada Reno, USA*; **Andrea Reiter**, *Department of Psychology, Julius-Maximilians-Universität Würzburg, Würzburg, Germany; Department of Child and Adolescence Psychiatry, Psychosomatics and Psychotherapy, University Hospital Würzburg, Germany; Collaborative Research Centre 940: Volition and Cognitive Control, Dresden University of Technology, Germany*

B 157 - Association between Screen Media Exposure and Behavioral Difficulties in Swiss Preschoolers (13:00 – 14:30)

Eva Unternaehrer, *Universitare Psychiatrische Kliniken Basel, Switzerland*; **Jalisse Schmid**, *Universitare Psychiatrische Kliniken Basel, Switzerland*; **Nevena Dimitrova**, *University of Applied Sciences and Arts Western Switzerland, Faculty of Social Work (HETSL | HES-SO*; **Fabio Sticca**, *University of Teacher Education in Special Needs, Zurich, Switzerland*

B 158 - Early and Current Determinants of Hippocampus Volume in Young Adults - Sex Differences and Pathways (13:00 – 14:30)

Lara A. Wallenwein, *Department of Psychology, University of Konstanz, Germany*; **Stephanie N.I. Schmidt**, *Department of Psychology, University of Konstanz, Germany*; **Maik Bieleke**, *Department of Sport Science, University of Konstanz, Germany*; **Julia Schüler**, *Department of Sport Science, University of Konstanz, Germany*; **Markus Gruber**, *Department of Sport Science, University of Konstanz, Germany*; **Daniela Mier**, *Department of Psychology, University of Konstanz, Germany*; **Jens C. Pruessner**, *Department of Psychology, University of Konstanz, Germany*

B 159 - A Biopsychosocial Perspective on Resilience: Habituation of Stress Reactivity to Repeated Psychosocial Stress (13:00 – 14:30)

Marie-christin Barthel, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Am Kaiserkai 1, 20457 Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University, Am Kaiserkai 1, Hamburg 20457, Germany*; **Markus Muehlhan**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Am Kaiserkai 1, 20457 Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University, Am Kaiserkai 1, Hamburg 20457, Germany*; **Nina Alexander**, *Department of Psychiatry and Psychotherapy, Philipps University Marburg, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany; Center for Mind, Brain and Behaviour, Philipps University Marburg, Hans-Meerwein-Str. 6, 35032 Marburg, Germany*; **Susanne Vogel**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Am Kaiserkai 1, 20457 Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg - University of Applied Sciences and Medical University, Am Kaiserkai 1, Hamburg 20457, Germany*

B 160 - Capturing The Temporal Dynamics of Rumination in Depression: An Approach Using Piecewise-Linear Recurrent Neural Networks With fMRI Time Series Data (13:00 – 14:30)

Joshua A. Rocha, *Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Heidelberg Academy of Science and Humanities, Heidelberg, Germany*; **Niklas Emonds**, *Interdisciplinary Center for Scientific Computing, University of Heidelberg, Heidelberg, Germany; Hector Institute for Artificial Intelligence in Psychiatry, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Peter Kirsch**, *Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Psychological Institute, Faculty of Behavioral and Cultural Studies, University of Heidelberg, Heidelberg, Germany*; **Georgia Koppe**, *Heidelberg Academy of Science and Humanities, Heidelberg, Germany; Interdisciplinary Center for Scientific Computing, University of Heidelberg, Heidelberg, Germany; Hector Institute for Artificial Intelligence in Psychiatry, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Martin F. Gerchen**, *Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Heidelberg Academy of Science and Humanities, Heidelberg, Germany; Psychological Institute, Faculty of Behavioral and Cultural Studies, University of Heidelberg, Heidelberg, Germany*

B 161 - Context-Specific Control - effects of Leaning and Preparation (13:00 – 14:30)

Linda Carmen Bräutigam, *Eberhard Karls University Tübingen, Germany*; **David Dignath**, *Eberhard Karls University Tübingen, Germany*

B 162 - Social Cognition as a Matter of Structural Brain Connections? A Systematic Review and Diffusion Weighted Imaging Meta-analysis (13:00 – 14:30)

Rita Hansl, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*; **Lara Maliske**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*; **Sofie Valk**, *Max Planck Institute for Human Cognitive and Brain Sciences, Stephanstr. 1a, 04103, Leipzig, Germany; Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7, Research Centre Julich, Julich, Germany; Institute of Systems Neuroscience, Medical Faculty, Heinrich Heine University Düsseldorf, Düsseldorf, Germany*; **Philipp Kanske**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, TUD Dresden University of Technology, Dresden, Germany*

B 163 - Embodied Chemosensory Perception - How Metabolic State Affects Olfactory and Gustatory Perception in Healthy Humans (13:00 – 14:30)

Syrine Rekhis, *Osnabrück University, Department of Psychology, Experimental Psychology II and Biological Psychology, Osnabrück, Germany*; **Imke Schamarek**, *University of Leipzig, Department of Medicine III, Division of Endocrinology, Nephrology and Rheumatology, Leipzig, Germany*; **Kerstin Rohde-zimmermann**, *University of Leipzig, Department of Medicine III, Division of Endocrinology, Nephrology and Rheumatology, Leipzig, Germany; Helmholtz Institute for Metabolic, Obesity and Vascular Research (HI-MAG, Helmholtz Center Munich at the University Leipzig and the University Clinic Leipzig, Leipzig, Germany*; **Ursula Stockhorst**, *Osnabrück University, Department of Psychology, Experimental Psychology II and Biological Psychology, Osnabrück, Germany*

B 164 - Neuronale Korrelate von Cue-Reaktivität auf distale und proximale Reize bei Personen mit Pornografie-Nutzungsstörung (13:00 – 14:30)

Florian Storz, *Justus-Liebig-Universität Gießen, Germany*; **Dzheylyan Kyuchukova**, *Justus-Liebig-Universität Gießen, Germany*; **Sina Wehrum-Osinsky**, *Justus-Liebig-Universität Gießen, Germany*; **Rudolf Stark**, *Justus-Liebig-Universität Gießen, Germany*

B 165 - Telomerase Activity and Telomere Length in Individuals with Mood Disorders: Findings from a High-Risk Sample with Previous Residential Care Placement (13:00 – 14:30)

Laura Gurri, *University Psychiatric Clinics Basel (UPK, Switzerland*; **David Bürgin**, *University Psychiatric Clinics Basel (UPK, Switzerland; Jacobs Center for Productive Youth Development, University of Zurich, Zurich, Switzerland*; **Eva Unternaehrer**, *University Psychiatric Clinics Basel (UPK, Switzerland*; **Nimmy Varghese**, *University Psychiatric Clinics Basel (UPK, Switzerland*; **Vera Clemens**, *Department of Child and Adolescent Psychiatry/Psychotherapy, University Hospital of Ulm, Germany*; **Jörg M. Fegert**, *Department of Child and Adolescent Psychiatry/Psychotherapy, University Hospital of Ulm, Germany*; **Cyril Boonman**, *University Psychiatric Clinics Basel (UPK, Switzerland; Department of Child and Adolescent Psychiatry - LUMC Curium, Leiden University Medical Center, Leiden, The Netherlands*; **Anne Eckert**, *University Psychiatric Clinics Basel (UPK, Switzerland*; **Marc Schmid**, *University Psychiatric Clinics Basel (UPK, Switzerland*; **Katharina Beck**, *University Psychiatric Clinics Basel (UPK, Switzerland*; **Maria Meier**, *Department of Psychology, University of Konstanz, Konstanz, Germany*

B 166 - Associations of Early and Recent Life Stress, CRP-Related DNA Methylation and Depression (13:00 – 14:30)

Paula Lea Usemann, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Friederike S. David**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Institute of Human Genetics, University of Bonn, School of Medicine & University Hospital Bonn, Bonn, Germany*; **Vincent Hammes**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Frederike Stein**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Florian Thomas-Odenthal**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Lea Teutenberg**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Kira Flinkenflügel**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Julia Hubbert**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Christoph Jurischka**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Judith Krieger**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Susanne Meinert**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Tim Hahn**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Jonathan Repple**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany; Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt, Goethe University, Frankfurt, Germany*; **Nils Opel**, *Department of Psychiatry and Psychotherapy, University Hospital Jena, Jena, Germany; German Center for Mental Health (DZPG, Halle-Jena-Magdeburg, Halle, Germany*; **Nico Melzer**, *Department of Neurology, Medical Faculty and University Hospital, Heinrich Heine University Düsseldorf, Düsseldorf, Germany*; **Hamidreza Jamalabadi**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Andreas Jansen**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*;

Benjamin Straube, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Markus M. Nöthen**, *Institute of Human Genetics, University of Bonn, School of Medicine & University Hospital Bonn, Bonn, Germany*; **Andreas J. Forstner**, *Institute of Human Genetics, University of Bonn, School of Medicine & University Hospital Bonn, Bonn, Germany; Institute of Neuroscience and Medicine (INM-1, Research Center Julich, Julich, Germany*; **Igor Nenadić**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Udo Dannlowski**, *Institute for Translational Psychiatry, University of Münster, Münster, Germany*; **Tilo Kircher**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*; **Nina Alexander**, *Department of Psychiatry and Psychotherapy, University of Marburg, Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Marburg, Germany*

B 167 - When Graphs Become Maps: Evidence for Spatial Biases in Relational Memory (13:00 – 14:30)

Timon Kunze, *SISSA, Italy*; **Mona Garvert**, *Julius-Maximilians-University Würzburg, Germany*; **Davide Crepaldi**, *SISSA, Italy; University of Pavia, Italy*

B 168 - Functional Network Reorganization Related to Context-changes in Naturalistic Social Cognition (13:00 – 14:30)

Lara Zoe Maliske, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität Dresden, Dresden, Germany*; **Konrad Lehmann**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität Dresden, Dresden, Germany*; **Matthias Schurz**, *Institute of Psychology and Digital Science Center, University of Innsbruck, Innsbruck, Austria*; **Malin Hildebrandt**, *Addiction Research Group, Faculty of Psychology, Technische Universität Dresden, Dresden, Germany*; **Emanuel Jauk**, *Department of Medical Psychology, Psychosomatics, and Psychotherapy, Medical University of Graz, Graz, Austria*; **Philipp Kanske**, *Clinical Psychology and Behavioral Neuroscience, Faculty of Psychology, Technische Universität Dresden, Dresden, Germany*

B 169 - Zwischen Kopfsache und Bauchgefühl: Die neuronale Wechselwirkung von Interozeption und Emotion (13:00 – 14:30)

Jasmin Schultze, *Abt. Klinische und Gesundheitspsychologie, Universität Ulm*; **Thomas Kammer**, *Klinik für Psychiatrie und Psychotherapie III, Universitätsklinikum Ulm*; **Georg Grön**, *Klinik für Psychiatrie und Psychotherapie III, Universitätsklinikum Ulm*; **Martin Ulrich**, *Klinik für Psychiatrie und Psychotherapie III, Universitätsklinikum Ulm*; **Olga Pollatos**, *Abt. Klinische und Gesundheitspsychologie, Universität Ulm*

B 170 - The Role of Interoception Awareness in Veracity Assessment Accuracy: Insights from Heartbeat-evoked Potentials (HEP) Study. (13:00 – 14:30)

Wiktoria Gucinska, *Nicolaus Copernicus University, Poland*

B 171 - (How) Does BOLD-variability Change with Psychotherapy? (13:00 – 14:30)

Charlotte Meinke, *Humboldt-Universität Berlin, Germany*; **Helena Wollscheid**, *Humboldt-Universität Berlin, Germany*; **Leonard Craemer**, *Humboldt-Universität Berlin, Germany*; **Volker Arolt**, *University of Münster, Institute for Translational Psychiatry*; **Udo Dannlowski**, *University of Münster, Institute for Translational Psychiatry*; Jürgen **Deckert**, *Department of Psychiatry, Psychosomatics, and Psychotherapy, Center of Mental Health, University Hospital of Würzburg, Würzburg, Germany*; **Katharina Domschke**, *Department of Psychiatry and Psychotherapy, Medical Center - University of Freiburg, Faculty of Medicine, University of Freiburg, Freiburg, Germany; German Center for Mental Health (DZPG, partner site Berlin-Potsdam, Germany*; **Alfons O. Hamm**, *Department of Biological and Clinical Psychology/Psychotherapy, University of Greifswald, Greifswald, Germany*; **Tilo Kircher**, *Department of Psychiatry and Psychotherapy & Center for Mind, Brain and Behavior, Philipps-University Marburg, Marburg, Germany*; **Jürgen Margraf**, *Mental Health Research and Treatment*

Center, Ruhr-Universität Bochum, Bochum, Germany; **Andre Pittig**, *Translational Psychotherapy, Institute of Psychology, University of Gottingen, Gottingen, Germany*; **Jan Richter**, *Department of Biological and Clinical Psychology/Psychotherapy, University of Greifswald, Greifswald, Germany; Department of Experimental Psychopathology, University of Hildesheim, Hildesheim, Germany*; **Silvia Schneider**, *Mental Health Research and Treatment Center, Ruhr-Universität Bochum, Bochum, Germany*; **Benjamin Straube**, *Department of Psychiatry and Psychotherapy & Center for Mind, Brain and Behavior, Philipps-University Marburg, Marburg, Germany*; **Andreas Ströhle**, *Department of Psychiatry and Psychotherapy, Campus Charité Mitte, Charité Universitätsmedizin Berlin, Berlin, Germany*; **Hans-ulrich Wittchen**, *Department of Psychiatry and Psychotherapy, University Hospital, Ludwig-Maximilians-University Munich, Munich, Germany*; **Ulrike Lueken**, *Humboldt-Universität Berlin, Germany; Department of Psychiatry, Psychosomatics, and Psychotherapy, Center of Mental Health, University Hospital of Würzburg, Würzburg, Germany; German Center for Mental Health (DZPG, partner site Berlin-Potsdam, Germany*

B 172 - Dissociation Between Behavioral and Neurophysiological Indicators of Cardiac Interoception in post-COVID Fatigue (13:00 – 14:30)

Nina Buntic, *University of Luxembourg*; **Jochen Schneider**, *Luxembourg Centre of Systems Biomedicine*; **Marc Schlesser**, *University of Luxembourg*; **André Schulz**, *University of Luxembourg*

B 173 - EEG Correlates of the Approach-Avoidance Task in Patients with Alcohol Dependence (13:00 – 14:30)

Charlotte Brosig, *Center of Mental Health, Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Rupert Maier**, *Center of Mental Health, Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Laura Freund**, *Center of Mental Health, Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Lisa Makowski**, *Center of Mental Health, Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*; **Lisa Rosin**, *Center of Mental Health, Dept. of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital of Würzburg, Germany*; **Vanessa Scholz**, *Center of Mental Health, Dept. of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital of Würzburg, Germany*; **Lorenz Deserno**, *Center of Mental Health, Dept. of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital of Würzburg, Germany*; **Stefan Unterecker**, *Center of Mental Health, Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany; Sozialstiftung Bamberg, Department of Psychiatry and Psychotherapy, Bamberg, Germany*; **Martin J. Herrmann**, *Center of Mental Health, Department of Psychiatry, Psychosomatics, and Psychotherapy, University Hospital Würzburg, Würzburg, Germany*

B 174 - The Influence of Autistic Traits on Visual Perception: A Visual Mismatch-Negativity Study (13:00 – 14:30)

Josephine Jörke, *Humboldt-Universität zu Berlin*; **Isabel Dziobek**, *Humboldt-Universität zu Berlin; Deutsches Zentrum für Psychische Gesundheit (DZPG, Standort Berlin-Potsdam*; **Mareike Bayer**, *Humboldt-Universität zu Berlin; Deutsches Zentrum für Psychische Gesundheit (DZPG, Standort Berlin-Potsdam*

B 175 - Reduced Insula Gray Matter Volume Is Linked to Illness Duration and Symptom Severity in Patients with Schizophrenia (13:00 – 14:30)

Sebastian Scheliga, *Uniklinik RWTH Aachen, Germany*; **Ute Habel**, *Uniklinik RWTH Aachen, Germany; JARA-Institute Brain Structure Function Relationship*; **Thilo Kellermann**, *Uniklinik RWTH Aachen, Germany; JARA-Institute Brain Structure Function Relationship*

B 176 - The Perfectionist s Dilemma: FRN in a New Ambivalent Task (13:00 – 14:30)

Anna Erlenbusch, *University Osnabrueck, Germany*; **Roman Osinsky**, *University Osnabrueck, Germany*

B 177 - Simultaneity Or Rhythmicity? Examining The Encoding of Multi-Item Working Memory in Human Gaze Patterns (13:00 – 14:30)

Felix Bröhl, *TU Dresden, Germany; Max Planck Institute for Human Development, Germany*; **Anouk Bielefeldt**, *Max Planck Institute for Human Development, Germany*; **Juan Linde-domingo**, *CIMCYC - Centro Mente, Cerebro y Comportamiento, Universidad de Granada, Spain*; **Bernhard Spitzer**, *TU Dresden, Germany; Max Planck Institute for Human Development, Germany*

B 178 - Shifting Priorities: How Reward Incentives Modulate Cognitive-Motor Interactions in a Dual-Task Paradigm (13:00 – 14:30)

Julian Elias Reiser, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Stefan Arnau**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Edmund Wascher**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*

B 179 - The Impact of Aversive Conditioning on Balancing Decision-Making Strategies (13:00 – 14:30)

Ishita Goyal, *Julius-Maximilians-University Würzburg, Germany*; **Yuheng Shi**, *Julius-Maximilians-University Würzburg, Germany*; **Leonardo Pettini**, *Max Planck School of Cognition, Leipzig, Germany; Humboldt-University of Berlin, Germany*; **Ondrej Zika**, *Max Planck Institute for Human Development, Berlin, Germany; Bielefeld University, Bielefeld, Germany*; **Mona Garvert**, *Julius-Maximilians-University Würzburg, Germany*

B 180 - The Effects of Brain Size and Sex on Resting-State MEG Activity (13:00 – 14:30)

Jana Fehring, *Institute for Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*; **Christina Stier**, *Institute for Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany; Clinic of Neurology, University Medical Center Gottingen, Gottingen, Germany*; **Joachim Groß**, *Institute for Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*

B 181 - The Link Between OCD And Increased Oscillatory Activity After Errors: Evidence from Patients and Unaffected First-degree Relatives (13:00 – 14:30)

Alexander Dolge, *University of Hamburg, Germany*; **Kim Marie Sobania**, *University of Hamburg, Germany*; **Anja Riesel**, *University of Hamburg, Germany*

B 182 - Inflammation, Social Stressors and Self-Harm - Examining the Biopsychosocial Development of Psychopathology (13:00 – 14:30)

Linda Dietrich, *University Hospital of Child and Adolescent Psychiatry and Psychotherapy, University of Bern, Switzerland; Graduate School for Health Sciences, University of Bern, Switzerland*; **Annekatrin Steinhoff**, *University Hospital of Child and Adolescent Psychiatry and Psychotherapy, University of Bern, Switzerland*

B 183 - Sleep Protects Word Pairs with Low Semantic Relatedness from Forgetting (13:00 – 14:30)

Juliane Nagel, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Karla Berger**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychology, University of Heidelberg, Heidelberg, Germany*; **Samuel Sander**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany*; **Jan Rummel**, *Department of Psychology, University of Heidelberg, Heidelberg, Germany*; **Gordon Benedikt Feld**, *Department of Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Department of Psychology, University of Heidelberg, Heidelberg, Germany*

B 184 - AI-driven Eye-gaze Correction Moderates Social Dynamics in Digital Social Interactions (13:00 – 14:30)

Sara Molteni, *Department of Psychology, Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, University of Freiburg, Freiburg, Germany*; **Tobias Kleinert**, *Department of Psychology, Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, University of Freiburg, Freiburg, Germany*; **Gregor Domes**, *Department of Biological and Clinical Psychology, University of Trier, Trier, Germany; Institute for Cognitive and Affective Neuroscience, University of Trier, Trier, Germany*; **Markus Heinrichs**, *Department of Psychology, Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, University of Freiburg, Freiburg, Germany*; **Bastian Schiller**, *Department of Psychology, Laboratory for Biological Psychology, Clinical Psychology, and Psychotherapy, University of Freiburg, Freiburg, Germany; Department of Psychology, Laboratory for Clinical Neuropsychology, Heidelberg University, Heidelberg, Germany*

B 185 - In Sync We Trust: Heart Rate Variability and Trust Decisions in an Investment Game (13:00 – 14:30)

Stella Wienhold, *University of Konstanz, Germany; Centre for the Advanced Study of Collective Behavior, University of Konstanz, Germany*; **Bernadette F. Denk**, *University of Konstanz, Germany; Centre for the Advanced Study of Collective Behavior, University of Konstanz, Germany*; **Nina Volkmer**, *University of Konstanz, Germany; Centre for the Advanced Study of Collective Behavior, University of Konstanz, Germany*; **Maria Meier**, *University of Konstanz, Germany*; **Raphaela J. Gaertner**, *University of Konstanz, Germany*; **Elea S. C. Klink**, *University of Konstanz, Germany*; **Wolfgang Gaissmaier**, *University of Konstanz, Germany; Centre for the Advanced Study of Collective Behavior, University of Konstanz, Germany*; **Jens C. Pruessner**, *University of Konstanz, Germany; Centre for the Advanced Study of Collective Behavior, University of Konstanz, Germany*

B 186 - Blinking Signals: Neural Correlates of Motor Readiness in Blink-Related EEG During Stimulus Expectation (13:00 – 14:30)

Stefan Arnau, *IfADo, Germany*; **Emad Alyan**, *IfADo, Germany*; **Julian Elias Reiser**, *IfADo, Germany*; **Edmund Wascher**, *IfADo, Germany*

B 187 - Deciding Under Uncertainty: How Fatigue Impacts Self-Reported Decision Difficulty and Confidence (13:00 – 14:30)

Tanja Müller, *Zurich Center for Neuroeconomics, Department of Economics, University of Zurich, Switzerland*; **Philippe Tobler**, *Zurich Center for Neuroeconomics, Department of Economics, University of Zurich, Switzerland*

B 188 - The Default Mode Network and Childhood Maltreatment in Borderline Personality Disorder: A Resting-State fMRI Study (13:00 – 14:30)

Lisa Betten, *Ambulatory Assessment in Psychology, Department of Psychology, Carl von Ossietzky Universität Oldenburg*; **Jella Voelter**, *Ambulatory Assessment in Psychology, Department of Psychology, Carl von Ossietzky Universität Oldenburg; University Hospital for Psychiatry and Psychotherapy, Faculty of Medicine and Health Sciences, Carl von Ossietzky Universität Oldenburg*

B 189 - Influence Of Lorazepam on Neuronal Oscillations and Temporal Perception (13:00 – 14:30)

Joachim Lange, *Heinrich Heine Universität Düsseldorf, Germany*; **Agnes Oros**, *Heinrich Heine Universität Düsseldorf, Germany*; **Alfons Schnitzler**, *Heinrich Heine Universität Düsseldorf, Germany*

B 190 - Mismatch Responses In Human Early Visual Cortex Activity (13:00 – 14:30)

Xiu Miao, *University of Tübingen, Germany; Graduate Training Centre of Neuroscience/IMPRS for Cognitive & Systems Neuroscience*; **Ninorte Dadak**, *University of Tübingen, Germany*; **Jan Born**, *University of Tübingen, Germany; Werner Reichardt Centre for Integrative Neuroscience; German Center for Diabetes Research (DZD, Institute for Diabetes Research & Metabolic Diseases of the Helmholtz Center Munich at the University of Tübingen (IDM; German Center for Mental Health (DZPG Tübingen*; **Karsten Rauss**, *University of Tübingen, Germany*

B 191 - Competing Outcomes Facilitate Approach-Avoidance Control in Motivational Conflict (13:00 – 14:30)

Menghuan Chen, *University of Würzburg*; **Andre Pittig**, *University of Gottingen*; **Paul Pauli**, *University of Würzburg*; **Matthias Gamer**, *University of Würzburg*

B 192 - Directed Neural Network Dynamics in Sensorimotor Integration: Divergent Roles of Frontal Theta Band Activity Depending on Age (13:00 – 14:30)

Adriana Böttcher, *Cognitive Neurophysiology, TU Dresden, Germany; University Neuropsychology Center, TU Dresden, Germany*; **Saskia Wilken**, *General Psychology: Judgment, Decision Making, & Action, University of Hagen, Germany*; **Markus Raab**, *Performance Psychology, German Sport University Cologne, Germany; School of Applied Sciences, London South Bank University, UK*; **Sven Hoffmann**, *General Psychology: Judgment, Decision Making, & Action, University of Hagen, Germany*; **Christian Beste**, *Cognitive Neurophysiology, TU Dresden, Germany; University Neuropsychology Center, TU Dresden, Germany; German Center for Child and Adolescent Health (DZKJ, partner site Leipzig/Dresden, Germany*

B 193 - The Time Course of Emotion Regulation: ERP Insights into Distraction and Reappraisal (13:00 – 14:30)

Hannah Plueckebaum, *Department of Psychology, RPTU Kaiserslautern-Landau, Landau, Germany; Center for Cognitive Science, RPTU Kaiserslautern-Landau, Kaiserslautern, Germany*; **Ann-kathrin Beck**, *Center for Cognitive Science, RPTU Kaiserslautern-Landau, Kaiserslautern, Germany*; **Dorian De La Fuente**, *Department of Psychology, RPTU Kaiserslautern-Landau, Landau, Germany*; **Julia Karbach**, *Department of Psychology, RPTU*

Kaiserslautern-Landau, Landau, Germany; **Ulrike Basten**, *Department of Psychology, RPTU Kaiserslautern-Landau, Landau, Germany*

B 194 - Basal Forebrain Structural Covariance Reflects Cholinergic Receptor Density Patterns (13:00 – 14:30)

Alexander Weuthen, *Klinik für Psychiatrie und Psychotherapie, Universitätsklinikum Jena, Germany; Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Germany; German Center for Mental Health (DZPG, partner site Halle-Jena-Magdeburg, Germany; Institute of Psychology, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany*; **Sidhant Chopra**, *Orygen, Melbourne, Australia; Center for Youth Mental Health, University of Melbourne, Melbourne, Australia*; **Meng Li**, *Klinik für Psychiatrie und Psychotherapie, Universitätsklinikum Jena, Germany; Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Germany*; **Bianca Besteher**, *Klinik für Psychiatrie und Psychotherapie, Universitätsklinikum Jena, Germany; Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Germany; German Center for Mental Health (DZPG, partner site Halle-Jena-Magdeburg, Germany*; **Martin Walter**, *Klinik für Psychiatrie und Psychotherapie, Universitätsklinikum Jena, Germany; Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Germany; German Center for Mental Health (DZPG, partner site Halle-Jena-Magdeburg, Germany*

B 195 - The Relationship Between Schizotypy Dimensions and Hippocampal Subfields In Healthy Individuals (13:00 – 14:30)

Feodora Neuhaus, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Tina Meller**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Frederike Stein**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Florian Thomas-odenthal**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Lea Teutenberg**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Paula Usemann**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Kira Flinkenflügel**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Julia Hubbert**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Christoph Jurischka**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Judith Krieger**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Susanne Meinert**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Tim Hahn**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Hamidreza Jamalabadi**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Nina Alexander**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Benjamin Straube**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Andreas Jansen**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Udo Dannlowski**, *Institute for Translational Psychiatry, University of Münster, Germany*; **Tilo Kircher**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*; **Igor Nenadić**, *Department of Psychiatry and Psychotherapy University of Marburg, Germany; Center for Mind, Brain and Behavior, University of Marburg, Germany*

B 196 - Computational Principles in Social Inference from Observed Affect (13:00 – 14:30)

Damon Dashti, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland; Swiss Center for Affective Sciences, University of Geneva, Switzerland*; **Todd Anthony Hare**, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland*; **Marius Constantin Vollberg**, *Zurich Center for Neuroeconomics, University of Zurich, Switzerland*

B 197 - Associations of Depressive Symptoms with Behavior and N170 in a Facial Oddball Task (13:00 – 14:30)

Korbinian Riepl, *University of Würzburg, Germany*; **Johannes Rodrigues**, *University of Würzburg, Germany*; **Johannes Hewig**, *University of Würzburg, Germany*

B 198 - From Early Life Stress to Adult Depression: Mediating and Moderating Roles of Chronic Stress and Acute Stress Responses (13:00 – 14:30)

Romina Sadrolsodori, *Leibniz Institute - IfADo, Dortmund, Germany*; **Leon Von Haugwitz**, *Leibniz Institute - IfADo, Dortmund, Germany*; **Mauro Larra**, *Leibniz Institute - IfADo, Dortmund, Germany*

B 199 - Negative Prediction Error Emerges in the Auditory Thalamus (13:00 – 14:30)

Alejandro Tabas, *Perceptual Inference Group; Basque Center on Cognition, Brain and Language; Spain; Max Planck Institute for Human Cognitive and Brain Sciences Leipzig; Germany; Chair of Cognitive and Clinical Neuroscience; Faculty of Psychology; TU Dresden; Germany*; **Heike Sönnichsen**, *Institut für Psychologie I; Universität zu Lübeck; Germany*; **Katharina Von Kriegstein**, *Chair of Cognitive and Clinical Neuroscience; Faculty of Psychology; TU Dresden; Germany*

B 200 - Gamified Smartphone Experiments Reveal the Effects of Decision-Making, Stress, and Cognitive Control on Real-Life Drinking in Alcohol Use Disorder (13:00 – 14:30)

Hilmar Zech, *Technische Universität Dresden, Germany*

B 201 - Aperiodic Noise Dynamics Shape Ripple Expression (13:00 – 14:30)

Frank J. Van Schalkwijk, *Hertie-Institute for Clinical Brain Research, Center for Neurology, University Medical Center Tübingen, Germany*; **Jack J. Lin**, *Department of Neurology, UC Davis, CA, US; Center for Mind and Brain, UC Davis, CA, US*; **Randolph F. Helfrich**, *Hertie-Institute for Clinical Brain Research, Center for Neurology, University Medical Center Tübingen, Germany*

B 202 - Postoperativer Verlauf verbaler Gedächtnisfunktionen infolge Epilepsiechirurgischer Temporallappenresektion: Geschlechtsspezifische Unterschiede nach initialer Verschlechterung (13:00 – 14:30)

Pia Langenberg, *Bielefeld University, Medical School OWL, Clinical Neuropsychology and Epilepsy Research, Universitätsstraße 25, D-33615 Bielefeld, Germany ; Bielefeld University, Medical School OWL, Bethel Epilepsy Center, Department of Epileptology, Krankenhaus Mara, Maraweg 21, D-33617 Bielefeld, Germany*; **Lea M. Reisch**, *Bielefeld University, Medical School OWL, Bethel Epilepsy Center, Department of Epileptology, Krankenhaus Mara, Maraweg 21, D-33617 Bielefeld, Germany*; **Johanna L. Hopf**, *Bielefeld University, Medical School OWL, Bethel Epilepsy Center, Department of Epileptology, Krankenhaus Mara, Maraweg 21, D-33617 Bielefeld, Germany*; **Florian J. Mücke**, *Bielefeld University, Medical School OWL, Bethel Epilepsy Center, Department of Epileptology, Krankenhaus Mara, Maraweg 21, D-33617 Bielefeld, Germany; Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Department of Neuropsychology and Rehabilitation Psychology, Thomas van Aquinostraat 4, 6525 GD Nijmegen, the Netherlands*; **Lea Wemheuer**, *Bielefeld University, Medical School OWL, Clinical Neuropsychology and Epilepsy Research, Universitätsstraße 25, D-33615 Bielefeld, Germany*; **Christian G. Bien**, *Bielefeld University, Medical School OWL, Bethel Epilepsy Center, Department of Epileptology, Krankenhaus Mara, Maraweg 21, D-33617 Bielefeld, Germany*; **Philip Grewe**, *Bielefeld University, Medical School OWL, Clinical Neuropsychology and Epilepsy Research, Universitätsstraße 25, D-33615 Bielefeld, Germany*

B 203 - Stimulus Characteristics and Category Assignment Influence Perceptual Category Learning and its Neural Correlates in Individuals with and without Autism Spectrum Condition (ASC) (13:00 – 14:30)

Claire Warren, *Dep. of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246, Hamburg, Germany; Dep. of Clinical Psychology and Psychotherapy, Charlotte Fresenius University of Psychology, Alte Rabenstraße. 32, 20148, Hamburg, Germany*; **Rebekka Baumert**, *Dep. of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246, Hamburg, Germany*; **Kira Diermann**, *Dep. of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246, Hamburg, Germany*; **Daniel Schöttle**, *Dep. of Psychiatry and Psychotherapy, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246, Hamburg, Germany*; **Tamine Fadai**, *Dep. of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246, Hamburg, Germany*; **Janine Bayer**, *Dep. of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246, Hamburg, Germany; Dep. of Clinical Psychology and Psychotherapy, Charlotte Fresenius University of Psychology, Alte Rabenstraße. 32, 20148, Hamburg, Germany*

B 204 - Investigating Sleep's Role in Reward-Based Memory Consolidation: A Large-Scale Registered Report (13:00 – 14:30)

Samuel Sander, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.*; **David Morgan**, *Open Science Office, University of Mannheim, Mannheim, Germany*; **Juliane Nagel**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.*; **Çağatay Gürsoy**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.*; **Simon Kern**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.*; **Gordon B. Feld**, *Clinical Psychology, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Addiction Behavior and Addiction Medicine, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany.; Department of Psychology, University of Heidelberg, Heidelberg, Germany.*

B 205 - Sex Hormones and Adolescent Mental Health: Systematic Review and Mini-Meta-Analysis (13:00 – 14:30)

Besim Prenaj, *University Hospital of Child and Adolescent Psychiatry and Psychotherapy, University of Bern*; **Annekatrin Steinhoff**, *University Hospital of Child and Adolescent Psychiatry and Psychotherapy, University of Bern*

B 206 - Fractal And Oscillatory Neural Dynamics in Working Memory as a Function of Latent Stimulus Statistics (13:00 – 14:30)

Michael A. Hahn, *Hertie Institute for Clinical Brain Research, University Medical Center Tübingen, Tübingen, Germany*; **Randolph F. Helfrich**, *Wu-Tsai Institute, Yale University, New Haven, USA*

B 207 - Neural and Behavioral Filters of Attention Interact During Auditory Spatial Attention (13:00 – 14:30)

Malte Wöstmann, *University of Lübeck, Germany*; **Jonas Obleser**, *University of Lübeck, Germany*

B 208 - EDIA: An Open-Source Toolbox for Virtual Reality-Based Experiments Using Unity (13:00 – 14:30)

Felix Klotzsche, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Humboldt-Universität zu Berlin, Germany*; **Jeroen De Mooij**, *thefirstfloor.nl, Rotterdam, Netherlands*; **Sven Ohl**, *Humboldt-Universität zu Berlin, Germany*; **Michael Gaebler**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*

B 209 - MuSe: Munich Sentence (MuSe) Database - Completion Norms for 619 German Sentences (13:00 – 14:30)

Elisabeth Friederike Sterner, *School of Medicine and Health, Department of Diagnostic and Interventional Neuroradiology, Technical University of Munich, Munich, Germany; Department of Experimental Psychology, Ludwig-Maximilians University Munich, Munich, Germany*; **Maximilian Stadler**, *School of Medicine and Health, Department of Diagnostic and Interventional Neuroradiology, Technical University of Munich, Munich, Germany*; **Franziska Knolle**, *School of Medicine and Health, Department of Diagnostic and Interventional Neuroradiology, Technical University of Munich, Munich, Germany*

B 210 - Action Control and Working Memory Interference (13:00 – 14:30)

Sahcan Özdemir, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Eren Günseli**, *Sabanci University*; **Daniel Schneider**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*

B 211 - Imaging Human Habenula Function at 7T (13:00 – 14:30)

Martin Fungisai Gerchen, *Central Institute of Mental Health, Germany*; **Maya Sophie Fischer**, *Central Institute of Mental Health, Germany*; **Gordon Benedikt Feld**, *Central Institute of Mental Health, Germany*; **Peter Kirsch**, *Central Institute of Mental Health, Germany*

B 212 - Never Too Old to Learn: A Study on Later Life Language Learning and a Combined Physical-Cognitive Intervention (13:00 – 14:30)

Louisa Sophie Richter, *University of Bamberg, Germany; University of Groningen, Netherlands*; **Jascha Rüsseler**, *University of Bamberg, Germany*; **Greg J. Poarch**, *University of Groningen, Netherlands*; **Merel C. J. Keijzer**, *University of Groningen, Netherlands*

B 213 - The Impact of Social Interactions in Daily Life on Pregnant Women with Depressive Symptoms (13:00 – 14:30)

Lea Göllner, *Translational Social Neuroscience Unit, Department of Psychiatry, Psychosomatics and Psychotherapy, Center of Mental Health, University Hospital Würzburg, Würzburg, Germany*; **Martin Weiß**, *Translational Social Neuroscience Unit, Department of Psychiatry, Psychosomatics and Psychotherapy, Center of Mental Health, University Hospital Würzburg, Würzburg, Germany; Department of Psychology I, University of Würzburg, Würzburg, Germany*; **Catharina Bartmann**, *Department for Obstetrics and Gynecology, University Hospital Würzburg, Würzburg, Germany*; **Anna Linda Leutritz**, *Department of Psychiatry, Psychosomatics and Psychotherapy, Center of Mental Health, University Hospital Würzburg, Würzburg, Germany*; **Grit Hein**,

Translational Social Neuroscience Unit, Department of Psychiatry, Psychosomatics and Psychotherapy, Center of Mental Health, University Hospital Würzburg, Würzburg, Germany

B 214 - Oscillatory Brain Activity Predicts Evoked Phantom Limb Pain (13:00 – 14:30)

Angela Serian, *Department of Neuropsychology and Psychological Resilience Research, Research Group Learning and Brain Plasticity in Mental Disorders, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Michel-Pierre Coll**, *School of Psychology, Universite Laval, Quebec City, Quebec, Canada*; **Simon Desch**, *Clinical Psychology, Department of Experimental Psychology, Heinrich Heine University Düsseldorf, Düsseldorf, Germany; Department of Neuropsychology and Psychological Resilience Research, Research Group Learning and Brain Plasticity in Mental Disorders, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Mohsen Mosayebi-Saman**, *Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany*; **Hubert Neubauer**, *BG Klinik Ludwigshafen, Department of Hand, Plastic, and Reconstructive Surgery, Burn Center at Heidelberg University, Ludwigshafen, Germany*; **Michael Nitsche**, *Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany; Bielefeld University, University Hospital OWL, Protestant Hospital of Bethel Foundation, University Clinic of Psychiatry and Psychotherapy, Bielefeld, Germany; German Centre for Mental Health (DZPG, Bochum, Germany*; **Mathieu Roy**, *Department of Psychology, McGill University, Montreal, Canada*; **Herta Flor**, *Department of Neuropsychology and Psychological Resilience Research, Research Group Learning and Brain Plasticity in Mental Disorders, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Jamila Andoh**, *Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*

B 215 - Impact of CBT Group Therapy on Effort-Reward Computations in Adolescents with Depression (13:00 – 14:30)

Ruiyi Li, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, Universitätsklinikum Würzburg, Germany*; **Chantal Wallau**, *Department of Psychology, Julius-Maximilians-Universität Würzburg, Germany*; **Maria Waltmann**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, Universitätsklinikum Würzburg, Germany*; **Andrea Reiter**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, Universitätsklinikum Würzburg, Germany; Department of Psychology, Julius-Maximilians-Universität Würzburg, Germany; German Center of Prevention Research in Mental Health, Julius-Maximilians-Universität Würzburg, Germany*

B 216 - How Similar Is Too Similar: Effects of Modality on Task Resumptions Following Interruptions (13:00 – 14:30)

Soner Ülkü, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Stephan Getzmann**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Ceren Arslan**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Daniel Schneider**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*

B 217 - Synthetic THC (Dronabinol) in the Evening Affects Stress Response the Following Afternoon (13:00 – 14:30)

Gordon B. Feld, *Central Institute of Mental Health, University of Heidelberg, Germany*; **Manfred Hallschmid**, *Instiute of Medical Psychology and Behavioural Neurobiology, University of Tübingen, Germany*

B 218 - The Impact of Semantic Information on Temporal Sequence Memory - An fMRI Study (13:00 – 14:30)

Henry Soldan, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Germany*; **Carina Zoellner**, *Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Germany*; **Oliver T. Wolf**, *Department of*

Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Germany

B 219 - Effects of Open-Label Placebos on Cortisol Concentrations, Alpha Amylase and Negative Affect in the Context of University Exams - The Role of Conscientiousness (13:00 – 14:30)

Carolin Liedtke, *MSB Medical School Berlin, Germany*; **Sören Enge**, *MSB Medical School Berlin, Germany*; **Michael Schaefer**, *MSB Medical School Berlin, Germany*

B 220 - The Effect of Fasting on Human Memory Consolidation (13:00 – 14:30)

Xuefeng Yang, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany; Graduate School of Neural & Behavioural Science, International Max Planck Research School, Tübingen, Germany*; **Xiu Miao**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany; Graduate School of Neural & Behavioural Science, International Max Planck Research School, Tübingen, Germany*; **Franziska Schweiggart**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany*; **Sophia Großmann**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany*; **Karsten Rauss**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany*; **Manfred Hallschmid**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany; German Center for Diabetes Research (DZD, Tübingen, Germany; Institute for Diabetes Research & Metabolic Diseases of the Helmholtz Center Munich at the University Tübingen (IDM, Germany; German Center for Mental Health (DZPG, Tübingen, Germany*; **Jan Born**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany; German Center for Diabetes Research (DZD, Tübingen, Germany; Institute for Diabetes Research & Metabolic Diseases of the Helmholtz Center Munich at the University Tübingen (IDM, Germany; German Center for Mental Health (DZPG, Tübingen, Germany; Werner Reichardt Center for Integrative Neuroscience, University of Tübingen, Tübingen, Germany*; **Nicolas D. Lutz**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany; Institute of Medical Psychology, LMU Munich, Munich, Germany*

B 221 - Increasing Eyewitness Identification Accuracy in Lineups Using 3D Interactive Virtual Reality (3DIL) (13:00 – 14:30)

Alexandros Kastrinogiannis, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Michael Gaebler**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Consortium 3dil**, *Fraunhofer Heinrich Hertz Institute, HHI; Humboldt University of Berlin; School of Psychology, Centre for Applied Psychology, University of Birmingham, Birmingham, UK; Psychology, Faculty of Natural Sciences, University of Stirling, United Kingdom; Department of Psychology, University of Victoria, Victoria, Canada*

B 222 - Executive Resources Shape the Effects of Language Predictability (13:00 – 14:30)

Merle Marie Schuckart, *University of Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Germany*; **Sarah Tune**, *University of Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Germany*; **Sandra Martin**, *Research Group Cognition and Plasticity, Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Lea-maria Schmitt**, *Donders Institute for Brain, Cognition and Behaviour, Radboud University, The Netherlands*; **Gesa Hartwigsen**, *Research Group Cognition and Plasticity, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Wilhelm Wundt Institute for Psychology, Leipzig University, Germany*; **Jonas Obleser**, *University of Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Germany*

B 223 - Investigating the Associations Between Anxiety-related Traits and Fear Acquisition and Extinction Using a Meta-analysis and Item-based Content Analysis: A Stage 1 Registered Report and Progress Report (13:00 – 14:30)

Maria Bruntsch, *University of Bielefeld, Bielefeld, Germany; University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Samuel E. Cooper**, *University of Texas at Austin, Austin, USA*; **Rany Abend**, *Reichman University, Herzliya, Israel*; **Marian Boor**, *Philipps-Universität Marburg, Marburg, Germany*; **Anastasia Chalkia**, *KU Leuven, Leuven, Belgium; American College of Thessaloniki, Thessaloniki, Greece*; **Mana R. Ehlers**, *University of Bielefeld, Bielefeld, Germany*; **David C. Johnson**, *City University of New York, New York, USA*; **Christina Kasper**, *University of Bielefeld, Bielefeld, Germany*; **Maren Klingelhöfer-Jens**, *University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Katharina Möller**, *University of Bielefeld, Bielefeld, Germany*; **Jayne Morriss**, *University of Southampton, Southampton, UK*; **Erik M. Müller**, *Philipps-Universität Marburg, Marburg, Germany*; **Lennart Wieser**, *University of Bielefeld, Bielefeld, Germany*; **Annalena Witte**, *University of Bielefeld, Bielefeld, Germany*; **Ondrej Zika**, *University of Bielefeld, Bielefeld, Germany; Max Planck Institute for Human Development, Berlin, Germany*; **Tina B. Lonsdorf**, *University of Bielefeld, Bielefeld, Germany; University Medical Center Hamburg-Eppendorf, Hamburg, Germany*

B 224 - Separating Target Enhancement from Distractor Suppression During Auditory Search (13:00 – 14:30)

Max Schulz, *Universität zu Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*; **Jonas Obleser**, *Universität zu Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*; **Malte Wöstmann**, *Universität zu Lübeck, Germany; Center of Brain, Behavior and Metabolism, University of Lübeck, Lübeck, Germany*

B 225 - Disentangling Neural Activation During Decision-making with Delayed, Probabilistic and Combined Outcomes (13:00 – 14:30)

Mathieu Pinger, *Department of Clinical Psychology, Central Institute of Mental Health Mannheim, Germany*; **Anna Poletaeva**, *Interdisciplinary Center for Scientific Computing, Faculty for Mathematics and Computer Science, University of Heidelberg, Heidelberg, Germany*; **Jasmin Denkmann**, *Department of Clinical Psychology, Central Institute of Mental Health Mannheim, Germany; Institute of Psychology, University of Heidelberg, Heidelberg, Germany*; **Georgia Koppe**, *Interdisciplinary Center for Scientific Computing, Faculty for Mathematics and Computer Science, University of Heidelberg, Heidelberg, Germany; Hector Institute for AI in Psychiatry, Central Institute of Mental Health Mannheim, Medical Faculty Mannheim, University of Heidelberg, Heidelberg, Germany*; **Peter Kirsch**, *Department of Clinical Psychology, Central Institute of Mental Health Mannheim, Germany*

B 226 - Neural Correlates of Human Habit Formation Studied by Motor Sequence Learning (13:00 – 14:30)

Clarissa Carolin Grundmann, *Institute of Clinical Psychology and Psychotherapy, Faculty of Psychology, Technische Universität Dresden, Germany*; **Claudia Ebrahimi**, *Department of Psychiatry and Neurosciences, Charité Universitätsmedizin Berlin, Germany*; **Viktoria Arndt**, *Institute of Clinical Psychology and Psychotherapy, Faculty of Psychology, Technische Universität Dresden, Germany*; **Kristina Schwarz**, *Institute of Clinical Psychology and Psychotherapy, Faculty of Psychology, Technische Universität Dresden, Germany*; **Florian Schlagenhauf**, *Department of Psychiatry and Neurosciences, Charité Universitätsmedizin Berlin, Germany*; **Tanja Endrass**, *Institute of Clinical Psychology and Psychotherapy, Faculty of Psychology, Technische Universität Dresden, Germany*

B 227 - The Influence of Rehearsal on Memory Precision and Stability (13:00 – 14:30)

Lena Schroeder, *Max Planck Institute for Biological Cybernetics, Tübingen*; **Svenja Klinkowski**, *University of Tübingen, Tübingen*; **Miles Keating**, *Graduate Training Centre of Neuroscience, Tübingen*; **Sebastian Müller**, *Max Planck Institute for Biological Cybernetics, Tübingen*; **Svenja Brodt**, *Max Planck Institute for Biological Cybernetics, Tübingen*

B 228 - Modelling Age-Related Differences in Valenced Learning Processes from Childhood to Adulthood (13:00 – 14:30)

David Felix Reindel, *University Hospital Würzburg, Germany*; **Solvejg K. Kleber**, *University of Würzburg*; **Toby Wise**, *Kings's College London*; **Andrea M.f. Reiter**, *University Hospital Würzburg, Germany; University of Würzburg*

B 229 - Heart Rate Synchrony is Associated with Friendship Status in 5th- and 6th-Graders (13:00 – 14:30)

Bernadette F Denk, *University of Konstanz, Germany; Cluster for the Advanced Study of Collective Behaviour, Konstanz, Germany*; **Stephanie Farah**, *University of Konstanz, Germany; Cluster for the Advanced Study of Collective Behaviour, Konstanz, Germany*; **Carmen Barth**, *University of Konstanz, Germany*; **Jens C Pruessner**, *University of Konstanz, Germany; Cluster for the Advanced Study of Collective Behaviour, Konstanz, Germany*; **Jeanine Grütter**, *University of Konstanz, Germany; Cluster for the Advanced Study of Collective Behaviour, Konstanz, Germany; Ludwig-Maximilian University of Munich, Germany*

B 230 - Optimizing taVNS: How Pulse Width Influences Autonomic and Perceptual Responses (13:00 – 14:30)

Lisa Drost, *University of Luxembourg, Luxembourg*; **Claus Vögele**, *University of Luxembourg, Luxembourg*

B 231 - The Occipital Fusiform Gyrus as a Key Region in Specific Phobia and its Treatment (13:00 – 14:30)

Markus Muehlhan, *MSH Medical School Hamburg, Germany; ICAN Institute of Cognitive and Affective Neuroscience, MSH Medical School Hamburg, Hamburg, Germany*; **Kevin Hilbert**, *Department of Psychology, HMU Health and Medical University Erfurt, Erfurt, Germany*; **Judith Schäfer**, *TUD Dresden University of Technology, Dresden Germany*; **Esther Seidl**, *TUD Dresden University of Technology, Dresden Germany*; **Katja Beesdo-baum**, *TUD Dresden University of Technology, Dresden Germany*

B 232 - Metabolic Regulation of Slot Machine Gambling (13:00 – 14:30)

Steven Geysen, *University of Cologne, Germany*; **Angela Brands**, *University of Cologne, Germany*; **Ruth Hanßen**, *Max Planck Institute for Metabolism Research, Germany*; **Julian Koenig**, *Clinic and Polyclinic for Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Cologne, Germany*; **Marc Tittgemeyer**, *Max Planck Institute for Metabolism Research, Germany*; **Jan Peters**, *University of Cologne, Germany*

B 233 - The Effects of Daytime Napping on the Ability to Retrieve Memories in Humans (13:00 – 14:30)

Nicolas D. Lutz, *Institute of Medical Psychology, Ludwig-Maximilians-Universität München, 80336 Munich, Germany*; **Iris Köller**, *Institute of Medical Psychology, Ludwig-Maximilians-Universität München, 80336 Munich, Germany*; **Tobias Staudigl**, *Department of Psychology, Ludwig-Maximilians-Universität München, 80802 Munich, Germany*; **Susanne Diekelmann**, *Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, 72076 Tübingen, Germany*; **Luciana Besedovsky**, *Institute of Medical Psychology, Ludwig-Maximilians-Universität München, 80336 Munich, Germany*

B 234 - How Learning Shapes the Brain - Material-Specific Structural Changes After Learning (13:00 – 14:30)

Antonia Lenders, *University of Freiburg, Germany*; **Deniz Kumral**, *University of Freiburg, Germany*; **Monika Schönauer**, *University of Freiburg, Germany*

B 235 - Both Slow Waves and Sleep Spindles are Essential for Successful Targeted Memory Reactivation (13:00 – 14:30)

Jessica Palmieri, *Institute of Psychology, Neuropsychology, University of Freiburg, Freiburg, Germany*; **Lea Himmer**, *Behavioral Neurobiology, University of Tübingen, Tübingen, Germany*; **Isabella Hartwig**, *Behavioral Neurobiology, University of Tübingen, Tübingen, Germany*; **Steffen Gais**, *Behavioral Neurobiology, University of Tübingen, Tübingen, Germany*; **Monika Schönauer**, *Institute of Psychology, Neuropsychology, University of Freiburg, Freiburg, Germany; BrainLinks Brain Tools, University of Freiburg, Freiburg, Germany; Bernstein Center Freiburg, University of Freiburg, Freiburg, Germany*

B 236 - Stress And Cardiac-Cycle Effects on Behavioral and Electrophysiological Correlates of Attention. (13:00 – 14:30)

Leon Von Haugwitz, *Leibniz Institute - IfADo, Dortmund, Germany, Germany*; **Edmund Wascher**, *Leibniz Institute - IfADo, Dortmund, Germany, Germany*; **Mauro Larra**, *Leibniz Institute - IfADo, Dortmund, Germany, Germany*

B 237 - Attention Under Control? A Multimodal Investigation of Attentional Biases in Children with Social Anxiety Disorder in Anticipation of a Social Stress Task (13:00 – 14:30)

Nadine Vietmeier, *Humbodt-Universität zu Berlin, Germany*; **Nik Dietze**, *University Clinic of Child and Adolescent Psychiatry and Psychotherapy, University Medical Centre EWL, Bielefeld University, Germany*; **Brunna Tuschen-caffier**, *Albert Ludwig University of Freiburg, Germany*; **Julia Asbrand**, *Humbodt-Universität zu Berlin, Germany; Friedrich Schiller University Jena, Germany*

B 238 - A Look on the Dark Side of Life: The Impact of Recent Life Adversity on Return of Fear in a Longitudinal Study (13:00 – 14:30)

Maren Klingelhöfer-Jens, *Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Manuel Kuhn**, *Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Department of Psychiatry, Harvard Medical School, and Center for Depression, Anxiety and Stress Research, McLean Hospital, Belmont, United States*; **Mareike Clos**, *Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany*; **Tina Lonsdorf**, *Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Department of Psychology, Biological Psychology and Cognitive Neuroscience, University of Bielefeld, Bielefeld, Germany*

B 239 - PupilFear: Benchmarking Pupillometry Preprocessing Methods for Assessment of Fear Conditioning (13:00 – 14:30)

Sourav Vishram Kulkarni, *University of Bonn, Transdisciplinary Research Area Life & Health, Hertz Chair for Artificial Intelligence and Neuroscience, Bonn, Germany*; **Federico Mancinelli**, *University of Bonn, Transdisciplinary Research Area Life & Health, Hertz Chair for Artificial Intelligence and Neuroscience, Bonn, Germany*; **Majid Ghorbanieftekhar**, *University of Bonn, Transdisciplinary Research Area Life & Health, Hertz Chair for Artificial Intelligence and Neuroscience, Bonn, Germany*; **Dominik Bach**, *University of Bonn, Transdisciplinary Research Area Life & Health, Hertz Chair for Artificial Intelligence and Neuroscience, Bonn, Germany*

B 240 - Deep Learning for the Objective Detection of Pain Dynamics: Towards Enhanced Pain Control (13:00 – 14:30)

Leonard Visser, *University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience*; **Christian Büchel**, *University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience*

B 241 - The Influence of Thalamic Lesions on Sleep-Associated Processing of Spatial Memory and EEG Related Oscillatory Dynamics in Humans (13:00 – 14:30)

Yasmin Fiedler, *Universitätsklinikum Schleswig-Holstein Kiel, Germany; Christian-Albrechts-Universität zu Kiel, Germany*; **Jonas Trautmann**, *Universitätsklinikum Schleswig-Holstein Kiel, Germany*; **Annika Hanert**, *Universitätsklinikum Schleswig-Holstein Kiel, Germany; Christian-Albrechts-Universität zu Kiel, Germany*; **Thorsten Bartsch**, *Universitätsklinikum Schleswig-Holstein Kiel, Germany*

B 242 - The Impact of Emotion Regulation Strategies on Affect and Facial EMG Responses (13:00 – 14:30)

Larissa Leist, *RPTU Kaiserslautern, Germany*; **Rebecca A. Rammensee**, *RPTU Kaiserslautern, Germany*; **Diana J. N. Armbruster-Genç**, *RPTU Kaiserslautern, Germany*; **Ulrike Basten**, *RPTU Kaiserslautern, Germany*

B 243 - Mid-Frontal Theta Contrasts Approach-avoidance vs. Approach-approach vs. Avoidance-avoidance Conflict (13:00 – 14:30)

Shubham Pandey, *Osnabrück University, Germany*; **Roman Osinsky**, *Osnabrück University, Germany*

B 244 - Transcranial Stimulation to Reduce the Symptoms of Tinnitus - the tACSitus Project (13:00 – 14:30)

Arnd Meiser, *Carl von Ossietzky Universität Oldenburg, Department of Psychology, Germany*; **Niklas Mellerke**, *Universitätsklinik für Hals-Nasen-Ohren-Heilkunde Oldenburg, Germany*; **Luca Marie Reinema**, *Universitätsklinik für Hals-Nasen-Ohren-Heilkunde Oldenburg, Germany*; **Daniela Rodriguez De Castro**, *Carl von Ossietzky Universität Oldenburg, Department of Psychology, Germany*; **Andreas Radeloff**, *Universitätsklinik für Hals-Nasen-Ohren-Heilkunde Oldenburg, Germany*; **Christoph Siegfried Herrmann**, *Carl von Ossietzky Universität Oldenburg, Department of Psychology, Germany*

B 245 - Die Rolle des Oxytocin-Rezeptor-Gen Polymorphismus (rs53576) bei akutem Stress und Empathie: Eine experimentelle Studie (13:00 – 14:30)

Annalena Schramm, *Justus-Liebig-Universität Gießen, Germany*; **Katrina Henkel**, *Justus-Liebig-Universität Gießen, Germany*; **Jürgen Hennig**, *Justus-Liebig-Universität Gießen, Germany*

B 246 - Cognitive Performance in Chronic Cannabis Users: The Role of Substance Use History in VLMT and WISC Outcomes (13:00 – 14:30)

Evgenii Shvedovskii, *Carl von Ossietzky Universität Oldenburg, Germany*; **Lisa Dandolo**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Sören Kuitunen-Paul**, *Technische Universität Chemnitz, Chemnitz, Germany*; **Lukas Andreas Basedow**, *Philipps-Universität Marburg, Marburg, Germany*; **Christiane Margarete Thiel**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Yulia Golub**, *Carl von Ossietzky Universität Oldenburg, Germany*

B 247 - Sensory Decision-Making for Active vs. Passive Movements: A Drift-Diffusion Meta-Analysis and Evidence from Schizophrenia (13:00 – 14:30)

Yifei He, *Philipps University Marburg, Germany*; **Edward Ody**, *Philipps University Marburg, Germany*; **Christina Schmitter**, *Philipps University Marburg, Germany*; **Bianca Van Kemenade**, *Justus Liebig University Giessen, Germany*; **Tilo Kircher**, *Philipps University Marburg, Germany*; **Benjamin Straube**, *Philipps University Marburg, Germany*

B 248 - Autobiografische Gedächtnisleistung nach Temporallappenresektion bei Mesialer Temporallappenepilepsie: Zusammenhang zwischen präoperativer funktioneller Konnektivität und postoperativer Gedächtnisveränderung (13:00 – 14:30)

Lea Wemheuer, *Klinische Neuropsychologie mit Schwerpunkt Epilepsieforschung, Medizinische Fakultät OWL, Universität Bielefeld, Germany*; **Anna Doll**, *Universitätsklinik für Epileptologie, Epilepsiezentrum Bethel, Krankenhaus Mara, Bielefeld, Germany; Affektive Neuropsychologie, Fakultät für Psychologie und Sportwissenschaften, Universität Bielefeld, Germany*; **Friedrich G. Woermann**, *Universitätsklinik für Epileptologie, Epilepsiezentrum Bethel, Krankenhaus Mara, Bielefeld, Germany; Gesellschaft für Epilepsieforschung, Bielefeld, Germany*; **Markus Mertens**, *Gesellschaft für Epilepsieforschung, Bielefeld, Germany*; **Christian G. Bien**, *Universitätsklinik für Epileptologie, Epilepsiezentrum Bethel, Krankenhaus Mara, Bielefeld, Germany*; **Philip Grewe**, *Klinische Neuropsychologie mit Schwerpunkt Epilepsieforschung, Medizinische Fakultät OWL, Universität Bielefeld, Germany*

B 249 - Psychobiologische Langzeitfolgen in Betroffenen leiser Repressionen in der DDR - Psyche, Inflammation und die protektive Rolle sozialer Unterstützung (13:00 – 14:30)

Ruth Marheinecke, *Institut für Psychosoziale Medizin, Psychotherapie und Psychoonkologie, Universitätsklinikum Jena, Friedrich-Schiller-Universität, Jena, Deutschland*; **Bernhard Strauß**, *Institut für Psychosoziale Medizin, Psychotherapie und Psychoonkologie, Universitätsklinikum Jena, Friedrich-Schiller-Universität, Jena, Deutschland; Deutsches Zentrum für Psychische Gesundheit (DZPG, Standort Halle-Jena-Magdeburg, Halle-Jena- Magdeburg, Deutschland*; **Veronika Engert**, *Institut für Psychosoziale Medizin, Psychotherapie und Psychoonkologie, Universitätsklinikum Jena, Friedrich-Schiller-Universität, Jena, Deutschland; Deutsches Zentrum für Psychische Gesundheit (DZPG, Standort Halle-Jena-Magdeburg, Halle-Jena- Magdeburg, Deutschland; Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Deutschland*

B 250 - Objectively vs. Subjectively Measured Sleep Durations and Vocabulary Learning in School-aged Children (13:00 – 14:30)

Sara Studte, *University of Oldenburg, Germany*; **Ingo Roden**, *University of Oldenburg, Germany*

B 251 - Unraveling Memory Engrams for Basic Visual Features (13:00 – 14:30)

Marius Kreis, *Max Planck Institute for Biological Cybernetics, Germany*; **Sara-estelle Lindwein**, *Max Planck Institute for Biological Cybernetics, Germany; Ludwig-Maximilians-Universität, München*; **Sebastian Mueller**, *Max Planck Institute for Biological Cybernetics, Germany*; **Svenja Brodt**, *Max Planck Institute for Biological Cybernetics, Germany*

B 252 - Dopamine's Role in Mental Imagery and Affective Processing (13:00 – 14:30)

Jana Karneboge, *Department of Psychology, University of Bonn, Germany*; **Merlin Monzel**, *Department of Psychology, University of Bonn, Germany*; **Janik Rademacher**, *Department of Psychology, University of Bonn, Germany*; **Martin Reuter**, *Department of Psychology, University of Bonn, Germany*

B 253 - Social Relevance Enhances Activation in the Human Mirror Neuron System. (13:00 – 14:30)

Christian A. Sojer, *Department of Psychology, University of Konstanz, Konstanz, Germany*; **Stephanie N. L. Schmidt**, *Department of Psychology, University of Konstanz, Konstanz, Germany*; **Peter Kirsch**, *Central Institute of Mental Health, Medical Faculty Mannheim / University of Heidelberg, Germany*; **Daniela Mier**, *Department of Psychology, University of Konstanz, Konstanz, Germany*

B 254 - EEGManySteps: Investigating the Influence of Experimental Setups on Gait-Related EEG Through Collaborative Data Collection and Analysis (13:00 – 14:30)

Melanie Klapprott, *Neuropsychology Lab, Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany*; **Liyu Cao**, *Department of psychology and behavioural sciences, Zhejiang University, China*; **Elena Cesnaite**, *Institute of Cognitive Science, Osnabrück University, Germany*; **Xinyu Chen**, *Zhejiang University, China*; **Sodiq Fakorede**, *University Kansas Medical Center, USA*; **Aitana Grasso-cladera**, *Institute of Psychology, University of Münster, Münster, Germany*; **Sein Jeung**, *Technical University of Berlin, Germany; Max-Planck Institute for Human Cognitive and Brain Sciences*; **Simon Ladouce**, *Brain and Cognition, Leuven Brain Institute, Katholieke Universiteit Leuven, Belgium*; **Janna Protzak**, *Wallace H. Coulter Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, Georgia, USA*; **Julian Elias Reiser**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Yahya Shirazi**, *Swartz Center for Computational Neuroscience, Institute for Neural Computation, University of California San Diego, La Jolla, CA, USA*; **Julius Welzel**, *Neuropsychology Lab, Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany; Neurology Department, University Medical Center Schleswig-Holstein, Kiel, Germany*; **Anna Wunderlich**, *Biological Psychology and Neuroergonomics, Technische Universität Berlin, Berlin, Germany*

B 255 - Human Cooperation - Modeling Strategies in 2x2 Games (13:00 – 14:30)

Sergej Golowin, *University Hospital Heidelberg, Germany*; **Christoph Korn**, *University Hospital Heidelberg, Germany*

B 256 - Beyond Hostility: Exploring Facial Emotion Recognition Biases in Youths with Conduct Disorder (13:00 – 14:30)

Janine Bacher, *Child and Adolescent Psychiatric Research Department, University Psychiatric Clinics Basel, Basel, Switzerland*; **Beryll Von Planta**, *Child and Adolescent Psychiatric Research Department, University Psychiatric Clinics Basel, Basel, Switzerland*; **Anka Bernhard**, *Department of Child and Adolescent Psychiatry, Medical Faculty, TUD Dresden University of Technology, German Center for Child and Adolescent Health (DZKJ, partner site Leipzig/Dresden, Dresden, Germany; Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Frankfurt, Goethe University, Frankfurt am Main, Germany*; **Graeme Fairchild**, *Department of Psychology, University of Bath, Bath, United Kingdom*; **Lucres Jansen**, *Department of Child and Adolescent Psychiatry, VU University Medical Center, Amsterdam, The Netherlands*; **Stephane A. De Brito**, *Centre for Human Brain Health, School of Psychology, University of Birmingham, Birmingham, United Kingdom*; **Christine M. Freitag**, *Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital Frankfurt, Goethe University, Frankfurt am Main, Germany*; **Kerstin Konrad**, *Child Neuropsychology Section, Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, RWTH Aachen University, Aachen, Germany; JARA-Brain Institute II, Molecular Neuroscience and Neuroimaging, RWTH Aachen & Research Centre Juelich, Juelich, Germany*; **Christina Stadler**, *Child and Adolescent Psychiatric Research Department, University Psychiatric Clinics Basel, Basel, Switzerland*; **Gregor Kohls**, *Department of Child and Adolescent Psychiatry, Medical Faculty, TUD Dresden University of Technology, German Center for Child and Adolescent Health (DZKJ, partner site Leipzig/Dresden, Dresden, Germany*; **Eva Unternaehrer**, *Child and Adolescent Psychiatric Research Department, University Psychiatric Clinics Basel, Basel, Switzerland*

B 257 - How Age and Acute Stress Effect Cognitive Modulation of Pain by Attention (13:00 – 14:30)

Angelika Dierolf, *University of Luxembourg, Department of Behavioural and Cognitive Sciences; Institute for Health and Behaviour; Research Group Stress, Pain, and Gene-Environment Interplay*; **Marian Van Der Meulen**, *University of Luxembourg, Department of Behavioural and Cognitive Sciences; Institute for Health and Behaviour; Research Group Stress, Pain, and Gene-Environment Interplay*; **Wolfgang Miltner**, *Friedrich-Schiller-Universität Jena, Klinische Psychologie*

B 258 - The Role of STN Low Beta Activity in Cognitive and Motor Inhibitory Control (13:00 – 14:30)

Annika E. Sauter, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany; Department of Psychology, Faculty of Human Sciences, University of Cologne, 50923 Cologne, Germany; Institute of Neuroscience & Medicine (INM-3, Cognitive Neuroscience, Forschungszentrum Julich, Leo-Brandt-Str. 5, 52425 Julich, Germany*; **Thomas Schüller**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Paola Mengotti**, *Institute of Neuroscience & Medicine (INM-3, Cognitive Neuroscience, Forschungszentrum Julich, Leo-Brandt-Str. 5, 52425 Julich, Germany*; **Michael T. Barbe**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Huiling Tan**, *MRC Brain Network Dynamics Unit, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK*; **Alek Pogosyan**, *MRC Brain Network Dynamics Unit, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK*; **Katharina Zur Mühlen**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Nikolai Tecker**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Laura Wehmeyer**, *MRC Brain Network Dynamics Unit, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK*; **Veerle Visser-vandewalle**, *Department of Stereotactic and Functional Neurosurgery, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany*; **Gereon R. Fink**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany; Institute of Neuroscience & Medicine (INM-3, Cognitive Neuroscience, Forschungszentrum Julich, Leo-Brandt-Str. 5, 52425 Julich, Germany*; **Simone Vossel**, *Department of Psychology, Faculty of Human Sciences, University of Cologne, 50923 Cologne, Germany; Institute of Neuroscience & Medicine (INM-3, Cognitive Neuroscience, Forschungszentrum Julich, Leo-Brandt-Str. 5, 52425 Julich, Germany*; **Juan C. Baldermann**, *Department of Neurology, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany; Department of Psychiatry and Psychotherapy, Medical Center University of Freiburg, Faculty of Medicine, University of Freiburg, Freiburg, Germany*

B 259 - Investigating Choir-singing Induced Plasticity of Brain and Behavior in Children: The CHOROS Study (13:00 – 14:30)

Eleftheria Papadaki, *Max Planck Institute for Human Development, Germany*; **Theodoros Koustakas**, *Max Planck Institute for Human Development, Germany*; **Ulman Lindenberger**, *Max Planck Institute for Human Development, Germany; Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Berlin, Germany, and London, UK*

B 260 - High-speed OLED monitors (480 Hz): A new tool in cognitive neuroscience (13:00 – 14:30)

Olaf Dimigen, *University of Groningen, The Netherlands*; **Arne Stein**, *University of Groningen, The Netherlands*

B 261 - Evaluating Tools for Mass Univariate Analysis of EEG: Insights from Empirical and Simulated Data (13:00 – 14:30)

Anna-Lena Tebbe, *University of Florida, United States of America*; **Andreas Keil**, *University of Florida, United States of America*

B 262 - Investigating Attentional Correlates of Subjective Preference Using the N2pc Component (13:00 – 14:30)

Susan Kang, *Osnabrück University, Germany*; **Roman Osinsky**, *Osnabrück University, Germany*

B 263 - Genetic architecture of Hypomanic Personality unveiled through pleiotropy with Psychiatric Disorders (13:00 – 14:30)

Philippe Jawinski, *Department of Psychology, Humboldt University Berlin, Germany*; **Marlen Böttcher**, *Department of Psychology, Humboldt University Berlin, Germany*; **Holger Kirsten**, *Institute for Medical Informatics, Statistics and Epidemiology, Leipzig University, Germany*; **Markus Scholz**, *Institute for Medical Informatics, Statistics and Epidemiology, Leipzig University, Germany*; **Tilman Hensch**, *IU International University of Applied Sciences, Germany*; **Sebastian Markett**, *Department of Psychology, Humboldt University Berlin, Germany*

B 264 - Der Einfluss von Musik (Rock- vs. Entspannungsmusik) auf das Befinden während eines simulierten Fluges in virtueller Realität mit Bewegungssimulation (13:00 – 14:30)

Stephanie Böhme, *University of Regensburg, Germany*; **Andreas Mühlberger**, *University of Regensburg, Germany*

B 265 - Does Spring Fatigue Exist? Preliminary Findings from an Online Survey Investigating Seasonal Variations in Fatigue, Daytime Sleepiness, and Sleep Quality (13:00 – 14:30)

Christine Blume, *Centre for Chronobiology, Psychiatric Hospital of the University of Basel, Basel, Switzerland; Research Cluster Molecular and Cognitive Neurosciences, University of Basel, Basel, Switzerland; Department of Biomedicine, University of Basel, Basel, Switzerland*; **Albrecht Vorster**, *Department of Neurology, Inselspital, Bern University Hospital, University of Bern, Bern, Switzerland; Interdisciplinary Sleep-Wake-Epilepsy-Center, Inselspital, Bern University Hospital, Bern, Switzerland; Swiss Sleep House Bern, Inselspital, Bern University Hospital, Bern, Switzerland*

B 266 - Gambling-related Beliefs as Erroneous Latent State Inference Under Dopaminergic Control: A Neurocomputational Analysis of Multi-Line Electronic Gambling Machines. (13:00 – 14:30)

Jan Peters, *University of Cologne, Germany*

B 267 - Percolation-Based Centrality Networks Enhance Behavioural Prediction from Structural Connectomes (13:00 – 14:30)

Raviteja Kotikalapudi, *Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, Germany; Department of Neurology, University Medicine Essen, Germany; Department of Neurology, University Medicine Goettingen, Germany*; **Tamas Spisak**, *Center for Translational Neuro- and Behavioral Sciences (C-TNBS, University Medicine Essen, Germany; Department of Neurology, University Medicine Essen, Germany*

B 268 - Effects of Depressive Symptoms on Neuronal Processing of Social Evaluative Feedback and Subsequent Changes in Expectations and Self-View (13:00 – 14:30)

Hanne Helming, *Universität Münster, Germany*; **Antje Peters**, *Universität Münster, Germany*; **Franka Hüttenhein**, *Universität Münster, Germany*; **Robert Moeck**, *Universität Münster, Germany*; **Thomas Straube**, *Universität Münster, Germany*; **Sebastian Schindler**, *Universität Münster, Germany*

B 269 - The Influence of Life Events on Acute Stress Reactions (13:00 – 14:30)

Katrina Henkel, *Justus-Liebig-Universität Gießen, Germany*; **Annalena Schramm**, *Justus-Liebig-Universität Gießen, Germany*; Jürgen **Hennig**, *Justus-Liebig-Universität Gießen, Germany*

B 270 - The Role of Relational Integration in Neurocognitive Aging (13:00 – 14:30)

Svenja Kremer, *Institute of Medical Psychology and Medical Sociology, Faculty of Medicine, University of Freiburg*; **Benjamin Rahm**, *Institute of Medical Psychology and Medical Sociology, Faculty of Medicine, University of Freiburg*; **Josef Unterrainer**, *Institute of Medical Psychology and Medical Sociology, Faculty of Medicine, University of Freiburg*; **Lena Schumacher**, *Institute of Medical Psychology and Medical Sociology, Faculty of Medicine, University of Freiburg*

B 271 - Cortical Signatures of Autism: Mapping Structural Folding Variability Through Multimodal Subtyping (13:00 – 14:30)

Vivian Werner, *Department of General Psychology and Cognitive Neuroscience, Friedrich Schiller University Jena, Germany; Social Potentials in Autism Research Group, Friedrich Schiller University Jena, Germany*; **Stefan R. Schweinberger**, *Department of General Psychology and Cognitive Neuroscience, Friedrich Schiller University Jena, Germany; Social Potentials in Autism Research Group, Friedrich Schiller University Jena, Germany; German Center for Mental Health (DZPG, Germany*; **Christian Gaser**, *Structural Brain Mapping Group, Jena University Hospital, Germany; Department of Psychiatry and Psychotherapy, Jena University Hospital, Germany; Department of Neurology, Jena University Hospital, Germany; German Center for Mental Health (DZPG, Germany*

B 272 - Magnocelullar Contributions to Fear Learning in Face Processing (13:00 – 14:30)

Enya Marie Weidner, *Bielefeld University, Germany*; **Johanna Kissler**, *Bielefeld University, Germany*

B 273 - Framing Effect on Neutral Decision-making (13:00 – 14:30)

Jiatong Liu, *Universtat Heidelberg, Germany*; **Yulia Oganian**, *Universität Tübingen, Germany*; **Christoph Korn**, *Universtat Heidelberg, Germany*

B 274 - The Effects of Holotropic Breathwork on Cerebral Blood Flow (13:00 – 14:30)

Anamaria-domnica Vladoiu, *Department of Molecular Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Julius-Maximilians University of Würzburg, Würzburg, Germany*; **Hana Adolphi**, *Department of Molecular Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; German Center for Mental Health (DZPG, partner site Mannheim*; **Marijan Bernardic**, *MIND Foundation, Berlin, Germany*; **Gerhard Gründer**, *Department of Molecular Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; MIND Foundation, Berlin, Germany; German Center*

for Mental Health (DZPG, partner site Mannheim; **Christian Schmitz**, *Department of Molecular Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; Central Institute of Mental Health, Department of Psychiatry, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; German Center for Mental Health (DZPG, partner site Mannheim*

B 275 - Herzrate und Herzratenvariabilität bei stationären Patient:innen mit Suizidversuch und Patient:innen ohne Suizidversuch - vorläufige Daten einer prospektiven multizentrischen Studie zur Vorhersage von Suizidversuchen (13:00 – 14:30)

Sonja Omlor, *Universität Duisburg-Essen, LVR-Universitätsklinikum Essen, Klinik für Psychiatrie und Psychotherapie, Medizinische Fakultät, Essen, Nordrhein-Westfalen, Deutschland; Universität Duisburg-Essen, Abteilung für Klinische Psychologie und Psychotherapie, Essen, Nordrhein-Westfalen, Deutschland*; **Norbert Scherbaum**, *Universität Duisburg-Essen, LVR-Universitätsklinikum Essen, Klinik für Psychiatrie und Psychotherapie, Medizinische Fakultät, Essen, Nordrhein-Westfalen, Deutschland; Universität Duisburg-Essen, Zentrum für Translationale Neuro- und Verhaltenswissenschaften, Essen, Nordrhein-Westfalen, Deutschland*; **Lena Spangenberg**, *Universität Leipzig, Abteilung für Medizinische Psychologie und Medizinische Soziologie, Leipzig, Sachsen, Deutschland*; **Heide Glaesmer**, *Universität Leipzig, Abteilung für Medizinische Psychologie und Medizinische Soziologie, Leipzig, Sachsen, Deutschland*; **Luise Böhler**, *Universität Leipzig, Abteilung für Medizinische Psychologie und Medizinische Soziologie, Leipzig, Sachsen, Deutschland*; **Nina Hallensleben**, *Universität Leipzig, Abteilung für Medizinische Psychologie und Medizinische Soziologie, Leipzig, Sachsen, Deutschland*; **Jana Serebriakova**, *Universität Duisburg-Essen, Abteilung für Klinische Psychologie und Psychotherapie, Essen, Nordrhein-Westfalen, Deutschland*; **Jannik Eimen**, *Universität Duisburg-Essen, Abteilung für Klinische Psychologie und Psychotherapie, Essen, Nordrhein-Westfalen, Deutschland*; **Thomas Forkmann**, *Universität Duisburg-Essen, Abteilung für Klinische Psychologie und Psychotherapie, Essen, Nordrhein-Westfalen, Deutschland*

B 276 - Hormonal And Developmental Influences on Social and Non-Social Reinforcement Learning: A Computational Approach (13:00 – 14:30)

Nils Arne Clusmann, *Neuroendocrinology and Human Biology Unit, Faculty of Mathematics, Informatics and Natural Sciences, Institute for Animal Cell- and Systems Biology, Hamburg University, Germany*; **Remi Janet**, *CNRS-Institut de Sciences Cognitives Marc Jeannerod, Neuroeconomics, Reward, and Decision Making Laboratory, Bron, France*; **Jean-Claude Dreher**, *CNRS-Institut de Sciences Cognitives Marc Jeannerod, Neuroeconomics, Reward, and Decision Making Laboratory, Bron, France*; **Esther Diekhof**, *Neuroendocrinology and Human Biology Unit, Faculty of Mathematics, Informatics and Natural Sciences, Institute for Animal Cell- and Systems Biology, Hamburg University, Germany*

B 277 - Studying attention with EEG and Virtual Reality: Assessing the Impact of VR Headset on event-related brain potentials (13:00 – 14:30)

Cezary Aleksander Zajac, *College of Interdisciplinary Individual Studies at the University of Silesia in Katowice, Poland*; **Karina Maciejewska**, *Institute of Biomedical Engineering, Faculty of Science and Technology, University of Silesia in Katowice, Poland*

B 278 - Objective Markers of Therapeutic Alliance: Physiological Synchrony in Cognitive Behavioral Therapy (13:00 – 14:30)

Clara Gernert, *LMU University Hospital, LMU Munich, Germany*; **Christine Falter-wagner**, *LMU University Hospital, LMU Munich, Germany*

B 279 - Multivariate Associations Between Emotion Dysregulation, Lifespan Adversities and Structural Brain Features (13:00 – 14:30)

Julia Ernst, *Child and Adolescence Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm*; **Pascal-maurice Aggensteiner**, *Child and Adolescence Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm*; **Anna Kaiser**, *Child and Adolescence Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*; **Tobias Banaschewski**, *Child and Adolescence Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm*; **Nathalie Holz**, *Child and Adolescence Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; German Center for Mental Health (DZPG, partner site Mannheim-Heidelberg-Ulm*

B 280 - Does Low Predictiveness of Display Repetition Slow Down Visual Search? (13:00 – 14:30)

Natalia Melnik, *Otto-von-Guericke University, Magdeburg, Germany*; **Stefan Pollmann**, *Otto-von-Guericke University, Magdeburg, Germany; Center for Behavioral Brain Sciences, Otto-von-Guericke University, Magdeburg, Germany*

B 281 - Decoding the Neural Basis of Interactions between Emotional Speech Processing and Attentional Control in Realistic Environments (13:00 – 14:30)

Katharina Lingelbach, *Applied Neurocognitive Psychology, Department of Psychology, Carl von Ossietzky University, Oldenburg, Germany; Applied Neurocognitive Systems, Fraunhofer Institute for Industrial Engineering IAO, Stuttgart, Germany*; **Jochem W. Rieger**, *Applied Neurocognitive Psychology, Department of Psychology, Carl von Ossietzky University, Oldenburg, Germany*

B 282 - Effekte eines virtuellen Aufmerksamkeitstrainings bei sozialer Angst unter Berücksichtigung der Variabilität emotionaler Gesichtsausdrücke (13:00 – 14:30)

Teresa Julia Schmidt, *Universität Regensburg, Deutschland*; **Theresa Friederike Wechsler**, *Universität Regensburg, Deutschland*; **Andreas Mühlberger**, *Universität Regensburg, Deutschland*

Social Interactions and Their Clinical Implications (14:30 – 16:00)

Hein, Grit; Walther, Sebastian

Mental disorders are commonly characterized by deficits in social motivation, social learning and social interactions. Vice versa, social interactions are part of the psychosocial treatments of psychiatric disorders. Thus, understanding the role of social interactions in clinically relevant conditions is essential for optimizing diagnosis and treatments. Our symposium brings together scientists from four different countries (Germany, Canada, United Kingdom, Switzerland) who present their research on different aspects of social interactions in health and disease, and discuss potential clinical applications. The first two talks focus on the basis of social interactions such as neurochemical processes (Jennifer Cook) as well as learning about the intentions of others and the underlying neural circuitries (Christoph Korn). Next, we will discuss the relationship between individual neural processing of social inferences and social contacts in the real world (Anita Tusche). Following up on this, the junior-scientist presentation focuses on the effects of every-day life social interactions on anxiety and depression (Annalena Jachnik). The final talk of the symposium gives insights into another significant aspect of social interactions, namely non-verbal communication, and its alteration in schizophrenia and depression (Anastasia Pavlidou). Collectively, the presentations of the experts will shed light onto the psychological and neurobiological mechanisms that drive social interactions, highlight their connection to psychopathology, and demonstrate how social interactions can be shaped in clinical applications or promote mental well-being.

Dopaminergic Modulation Independently Affects Movement and Social Cognition (14:30 – 16:00)

Jennifer Cook, *University of Birmingham, United Kingdom*; **Bianca Schuster**, *University of Vienna, Austria*; **Sophie Sowden**, *University of Birmingham, United Kingdom*; **Alicia Rybicki**, *University of Birmingham, United Kingdom*; **Lydia Hickman**, *University of Cambridge, United Kingdom*; **Dagmar Fraser**, *University of Birmingham, United Kingdom*

Autism and Parkinsons are traditionally associated with social and motor differences, respectively, but they share overlapping features - including motor differences in Autism and social differences in Parkinsons. Despite this, the biological basis of overlapping social and motor differences remains unclear. Both Autism and Parkinsons have been linked to differences in the dopamine system, suggesting that dopamine system variation might be linked to both social and motor differences. To investigate this, we conducted a series of studies examining the role of dopamine in social and motor function through dopaminergic drug manipulation. Our research demonstrated that dopamine influences how we learn from direct experience versus secondary sources, whether social or non-social (Rybicki et al., 2022). Blocking dopamine D2/D3 receptors with haloperidol impaired participants ability to interpret others' mental states, highlighting dopamine's role in understanding thoughts and intentions (Schuster et al., 2024). Further studies revealed a baseline-dopamine-level-dependent effect of haloperidol on emotion recognition: People with lower dopamine improved when given haloperidol, while those with higher dopamine were less accurate in emotion recognition (Schuster et al., 2022). In addition to these social functions, dopamine was shown to influence not just movement speed but also adaptive modulation of speed (meta-modulation), challenging traditional views linking dopamine only to movement vigour (Hickman et al., 2024). Nevertheless, whilst we confirmed that dopamine influences both movement and social cognition, no evidence was found that the effects on social cognition were mediated through body movement. This research suggests that dopaminergic modulation independently affects movement and social cognition.

Learning About Others Cooperative and Competitive Intentions Under Ambiguity (14:30 – 16:00)

Sihui Zhang, *Section Social Neuroscience, Department of General Psychiatry, Heidelberg University*; **Christoph W. Korn**, *Section Social Neuroscience, Department of General Psychiatry, Heidelberg University*

Adequately navigating social interactions requires learning about others intentions, i.e., whether they intend to cooperate or compete. However, in many contexts, individuals can only observe others outcomes, leaving the information about their intentions, goals, and capacities ambiguous and incomplete. One motivation to develop a task that captures intention learning under such ambiguous situations is that this learning becomes even more challenging for people with personality disorders, as they already have difficulties in inferring others internal mental states. Here, we tested healthy participants in a set of studies (3 behavioral experiments, N = 99 in total; one fMRI experiment, N = 32). We designed variants of sequential social decision-making tasks to investigate how individuals navigate ambiguous situations in which others internal intentions and the influence of the external environment are congruent or incongruent. That is, participants need to infer whether the observed outcomes are determined by the external environment or the inherent intentions of others. Our results revealed a negativity bias: participants learned competitive intentions better than cooperative intentions in incongruent conditions. Variants of Rescorla-Wagner models and Bayesian learning frameworks described the intention learning process. The bilateral dorsolateral prefrontal cortex, dorsomedial prefrontal cortex and temporoparietal junction were involved in the interaction of ambiguity, intention and outcome. Taken together, our results underscore the challenges of deciphering different intentions in ambiguous environments and the critical role of a negativity bias. Our task is promising as a tool to test and understand social dysfunctions, for example in patients with personality disorders.

Neural Signatures of Social Inference Predict Real-World Social Connectivity and Loneliness Across the Lifespan (14:30 – 16:00)

Anita Tusche, *Queen's University, Canada*

The ability to infer others' thoughts and feelings is fundamental to social interaction, yet its relationship with real-world social behavior and loneliness remains unclear. Using fMRI, we investigated whether neural activation during social inference predicts social connectivity and subjective loneliness. Across three neurotypical samples (total n = 126) and one autistic sample (n = 23), we found that activation patterns in the right posterior superior temporal sulcus (pSTS) during social inference robustly predicted social network size, but not non-social inference. These findings generalized across individuals and were cross-validated within and between groups. Additionally, pSTS activation correlated with autism-like traits and symptom severity. In an independent sample of older adults (n = 56), neural responses during social inference also predicted subjective loneliness, suggesting that similar neural mechanisms underlie both objective and subjective social disconnection. These results demonstrate that brain activity during social inference serves as a meaningful neural marker of social integration and well-being. Importantly, our findings generalize across neurotypical and atypical populations and across the lifespan, highlighting the crucial role of social cognition in maintaining social bonds and mitigating loneliness.

The Effects of Types of Social Support in Everyday-life Social Interactions on Anxiety and Mood in Depression and Anxiety Disorders (14:30 – 16:00)

Annalena Jachnik, *University Hospital Würzburg, Center of Mental Health, Würzburg, Germany*; **Martin Weiß**, *University Hospital Würzburg, Center of Mental Health, Würzburg, Germany; University of Würzburg, Institute of Psychology, Würzburg, Germany*; **Fabian Rothbauer**, *University Hospital Würzburg, Center of Mental Health, Würzburg, Germany*; **Grit Hein**, *University Hospital Würzburg, Center of Mental Health, Würzburg, Germany*

Social interactions and social support can buffer anxiety and negative emotions. Patients suffering from depression and anxiety disorders might benefit from such social buffering effects. Previous research has mainly focused on healthy participants in laboratory settings and it is unclear whether the observed effects apply to everyday life. Furthermore, social support is multidimensional, with different types potentially having distinct effects on outcome variables like anxiety and mood. This study investigated the effects of social support types on state social anxiety during social interactions and mood directly after social interactions in everyday life of patients with depression and anxiety disorders and healthy controls. Using smartphone-based Ecological Momentary Assessment (EMA), participants reported on social interaction characteristics, the received support, and their anxiety and mood levels based on six survey prompts per day on five consecutive days. Preliminary data of N=28 patients and N=38 controls showed that patients experienced higher state social anxiety during social interactions and more depressive mood afterwards compared to controls. Greater emotional and esteem support were associated with lower anxiety, while higher informational support was linked to increased anxiety during social interactions, although it had a beneficial effect on patients general mood compared to controls. Furthermore, emotional support had a positive effect on general mood and esteem support was linked to lower depressive mood after social interactions. This study highlights the benefits of EMA research, specifically in clinical samples, and characterizes the effects of types of everyday-life social support on prevalent symptoms of anxiety and depression disorders.

Nonverbal Communication Deficits in Schizophrenia and Depression (14:30 – 16:00)

Anastasia Pavlidou, *University of Bern, Switzerland*; **Sebastian Walther**, *University of Bern, Switzerland; University Hospital of Würzburg, Germany*

Gestures are visible bodily movements used alone or in conjunction with speech to convey meaning, intentions and emotions and are an integral part for successful social communication. Clinical research often focuses on specific disorder deficits in relation to gesture performance accuracy, however emerging evidence suggests that gesture deficits may transcend diagnostic boundaries. Understanding the transdiagnostic nature of gesture deficits is important as it might clarify the shared and distinct mechanisms associated with these deficits. Gesture performance accuracy was evaluated across three clinical adult populations: schizophrenia spectrum disorder, major depressive disorder, and autism spectrum disorder. The Test-of-Upper-Limb-Apraxia (TULIA) was used to assess gesture performance accuracy. TULIA includes two domains: imitation, where participants perform gestures after a visual demonstration, and pantomime, where gestures follow a verbal command. Within these domains, gestures are categorized as meaningless (novel), intransitive (communicative), or transitive (tool-based). We observed consistent overall gesture deficits across all three clinical populations. However, when investigating gesture deficits within domains and categories notable differences emerged. Patients with schizophrenia showed greater disturbances in the pantomime meaningless category, while patients with depression had deficits in all categories but the pantomime meaningless. Further, individuals with autism showed greater deficits in tool-based gestures irrespective of domain. Our results suggest that the identified gesture deficit represents a transdiagnostic feature. The observed differences in specific domains and/or categories suggest that they likely arise from distinct underlying mechanisms specific to each disorder. These results underscore the importance of considering both shared and individual characteristics of clinical impairments.

Neural and Behavioural Insights into Predictive Processing in Action and Perception (14:30 – 16:00)

Ody, Edward; He, Yifei

Predicting the sensory consequences of actions is fundamental to maintaining meaningful interaction with the outside world, allowing us to select appropriate actions, distinguish self- and externally generated sensory sensations, retain a sense of agency, and interact with others. This symposium brings together current research examining predictive processing in action and perception, exploring how motor-based expectations influence neural and behavioural responses to self-generated and socially elicited sensations. We will present a range of perspectives covering EEG, MRI, EMG and behavioural methods.

Roy Mukamel and Batel Buaron (Tel Aviv) will begin by discussing how actions are bound to their sensory outcomes, examining how temporal expectations and predictions contribute to agency and the neural processing of self-generated stimuli. Andreas Widmann (Leipzig) will follow with research on how action intentions modulate early auditory sensory processing, demonstrating that top-down predictions influence prediction error responses to unexpected self-generated sounds. Bence Neszmelyi (Würzburg) will then explore the role of predictability in social and non-social action effects, investigating whether anticipatory representations of social responses emerge in effector systems before an action is performed. Edward Ody (Marburg) will present findings on how motor prediction sharpens the neural representation of action outcomes, revealing that active movement enhances early visual processing independently of prior expectations. Finally, Peng Wang (Greifswald) will discuss studies demonstrating how neural oscillations align with movement frequencies, particularly under conditions requiring visuomotor adaptation, shedding light on how rhythmic cortical activity supports sensory-motor integration.

Together, these diverse contributions provide insights into how motor-based prediction influences perception.

Neural Mechanisms of Motor and Sensory Predictive Signals (14:30 – 16:00)

Roy Mukamel, *Tel Aviv University, Israel*; **Batel Buaron**, *Tel Aviv University, Israel*

Performance of goal-directed actions requires integrating motor commands with their expected outcome and discriminating external sensory events from those evoked by the agent. It was shown that voluntary actions modulate sensory evoked neural responses relative to responses evoked by identical stimuli from external sources. A prominent theory suggests that outcome predictions are sent from motor to relevant sensory regions and modulate their neural state. However, predictive signals are not unique to actions and can be associated with non-motor sources. In a set of two studies, we examined whether motor and auditory signals predicting a visual outcome share common mechanisms. In an EEG study (n=30), participants learned the coupling between cues (button-press/sound) and ensuing pictures. Visual evoked responses (P100) were smaller in the visuomotor vs. audiovisual condition, even on the first repetition of learning when no specific visual prediction could be formed. Additionally, no interaction between cue-type and learning stage was found, suggesting that the effect of experience on P100 amplitude is similar across cue type. We further examine the anatomical distribution of motor and auditory predictive signals using fMRI (n=14). Participants watched visual stimuli preceded by button-press/sound. We found that activity in visual cortex for identical visual stimuli was sensitive to cue type. Furthermore, button presses, but not sounds, influence visual cortex even in the absence of visual stimulation. Together these studies suggest that both motor and sensory predictive cues affect sensory regions, in addition to a global influence unique to actions that is irrespective of coupled visual outcome.

Action Intention Shapes the Early Sensory Processing of Auditory Action Effects (14:30 – 16:00)

Andreas Widmann, *Wilhelm Wundt Institute for Psychology, Leipzig University, Germany*; **Betina Korka**, *Zander Labs, Munich, Germany*; **Tjerk T. Dercksen**, *Leibniz Institute for Neurobiology, Magdeburg, Germany*; **Erich Schröger**, *Wilhelm Wundt Institute for Psychology, Leipzig University, Germany*

I will summarise a series of recent studies showing that action intention can modulate early auditory sensory processing through top-down predictions in the context of self-generated sounds. Signatures of auditory prediction error (e.g., N1, Mismatch Negativity [MMN]) can be observed in event-related brain potentials (ERPs) in response to auditory input that violates bottom-up established predictions based on sensory regularities. (1) We observed similar prediction errors in response to unexpected action effects that violated top-down intention-based predictions (but not sensory regularities). (2) Moreover, prediction errors in response to violations of sensory regularities were abolished when the violating action effects were consistent with action intention. This suggests that intention-based predictions can override predictions based on sensory regularities. (3) Prediction error responses to unexpected violations of action-effect associations were only observed when participants were asked to produce a sound sequence by pressing buttons, but not when they were asked to produce a sequence of button presses. Thus, the association of an action with a specific action-effect is not sufficient, but action intention is required. (4) Finally, early prediction error responses to the unexpected omission of action effects provide evidence that indeed intention-related top-down predictions are reflected in the observed modulations of early sensory processing of sounds. Taken together, these findings provide a comprehensive picture of the interplay between bottom-up and top-down prediction and the primacy of intention over sensory regularities in action-effect processing.

Predicting Social Action Consequences (14:30 – 16:00)

Bence Neszmelyi, *University of Trento, Italy; University of Würzburg*; **Yanick Kloss**, *University of Würzburg*; **Roland Pfister**, *Trier University*

In social interactions, actions are often aimed at eliciting a response from co-actors. In many cases, these responses are predictable, enabling agents to form expectations about the social consequences of their actions. Across a series of experiments combining electrophysiological (ERP, EMG) and behavioral methods, we investigated how such expectations influence action planning and the processing of social action outcomes, and how these processes differ from those involved in interactions with the inanimate environment. In two ERP experiments we manipulated participants beliefs about the nature of their interaction partner (human or computer) whose responses either met or violated participants expectations. Contrary to our hypotheses, slow ERP components related to stimulus predictability and those associated with prediction violation were more pronounced during machine interactions. This suggests that participants may view the inanimate environment as more reliable, leading to stronger predictability-related effects. In these studies, and in two additional EMG experiments we also examined the role of anticipated social action effects in motor planning. The results did not reveal a substantial difference between the contribution of social and non-social effects to action control. EMG data suggested anticipatory representation of social action effects in the agents effector system, but this was not directly tied to action preparation mechanisms. These findings indicate that while the unique features of social interaction can influence prediction-related sensory processing, the roles of social and non-social effects in action control appear surprisingly similar.

Motor Prediction Sharpens Early Visual Representations of Action Outcomes Independent of Prior Expectations (14:30 – 16:00)

Edward Ody, *University of Marburg, Germany*; **Tilo Kircher**, *University of Marburg, Germany*; **Benjamin Straube**, *University of Marburg, Germany*; **Yifei He**, *University of Marburg, Germany*

According to forward model theories of motor control, sensory consequences of actions are predicted based on an efference copy of the motor command. Correct predictions result in the modulation of action feedback while incorrect predictions result in prediction errors. An alternative view, based on Bayesian models, suggests that incoming sensory feedback is predicted based on the accumulation of prior evidence. Here, in an EEG study (N = 24), we examined whether motor prediction sharpens the neural representation of action outcomes independently of prior expectations. In separate blocks, participants either actively triggered Gabor patches with a button press or passively observed them. The patches had 50% probability of having left or right orientation and the order was randomised. To retain attention, participants were asked to respond to vertical catch trials (4/60 per block). We ran a time-resolved decoding analysis by training a classifier (SVM, 5-fold) at each time point to decode the orientation separately for the active and passive conditions. Both conditions showed above-chance decoding shortly after (~100 ms) the onset of the Gabor patch. However, active showed significantly higher decoding than passive, suggesting a sharper representation of the grating orientation in early visual processing. This result demonstrates that forward model motor prediction contributes to sharpening the representation of action outcomes, even when those outcomes can not be predicted based on the accumulation of prior knowledge.

Aligning Brain Rhythms with Action: A Case for Neural Entrainment During Visuomotor Conflict (14:30 – 16:00)

Peng Wang, *University of Greifswald, Germany*; **Jakub Limanowski**, *University of Greifswald, Germany*

Cortical oscillations have been linked to key processes in sensorimotor integration and motor control; and they have been shown to align with environmental or behavioural

rhythms in many cases (entrainment). Here, I will present the results of MEG and EEG studies that used virtual reality to investigate the oscillatory correlates of adaptive visuomotor control. In both studies, participants performed a continuous rhythmic hand-target matching task; i.e., via a data glove worn on their unseen real hand (RH), they controlled a virtual hand (VH) to match a visual target oscillation. We manipulated visuomotor congruence by adding delays to the VH movements. In the MEG study, participants focused on either the RH or VH to match a 0.5 Hz target oscillation under delayed or synchronous visual movement feedback. In the EEG study, we varied both the target frequencies (0.3 vs 0.5 Hz) and the visual feedback delays (3/20 vs 1/4 cycle). Across experiments, we observed strong induced low-frequency neural oscillations related to key task frequencysuggesting neural entrainment to behaviourally relevant rhythms. Furthermore, when tracking under delayed visual movement feedback, we found low-frequency oscillations in the beta range to phase-lock with the task frequencies. Beta power thereby did not seem to exclusively encode somatomotor or visual signals, but rather, their (nonlinear) integration. Together, these results align with a proposed key role of beta oscillations in behavioural control; and suggest their potential interaction with bodily rhythms especially under adaptation to visuomotor conflicts.

Neural Correlates of Higher Cognitive Function: Insights from Individual Differences and Cognitive Neuroscience (14:30 – 16:00)

Sadus, Kathrin; Klatt, Laura

Attentional control, memory and intelligence are cornerstones of human higher-order cognition. Research on the neurobiological underpinnings of these fundamental cognitive functions can be approached from different directions, including experimental manipulation and inter-individual differences research. This symposium aims to integrate these perspectives, bringing together four talks that highlight different methodological approaches to assess neural correlates of higher-order cognition. The first talk will focus on the interplay of selective attention and multisensory integration in audiovisual working memory, demonstrating across two EEG studies that task-irrelevant cross-modal features are automatically encoded into working memory. The second talk investigates retroactive interference between working memory and episodic memory and shows that episodic memory representations are particularly vulnerable to interference from subsequent working memory processing when the way relevant information is probed is similar across tasks. The third presentation will examine the inter-individual differences in intelligence and its relationship to working memory capacity and neurocognitive processing speed, showing that the mental speed hypothesis cannot be generalized to WM encoding processes. The fourth talk introduces a MATLAB application that simplifies the recovery of ERP component latencies to enhance accuracy and efficiency in measuring the speed of neural mechanisms an approach widely used in both inter-individual differences research and experimental cognitive neuroscience. Finally, we will close with an outlook on how cognitive neuroscience can inform inter-individual differences research and vice versa. Together, this symposium provides a comprehensive perspective on how diverse methodological approaches deepen our understanding of the neural mechanisms underlying higher cognitive functions.

Storage Of Task-irrelevant Features In Audiovisual Working Memory (14:30 – 16:00)

Laura-Isabelle Klatt, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Ceren Arslan**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Stephan Getzmann**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*; **Daniel Schneider**, *Leibniz Research Centre for Working Environment and Human Factors, Germany*

Efficient use of limited working memory capacity requires prioritizing task-relevant information. However, when attending to objects with multiple features, task-irrelevant features are encoded into working memory in a largely automatic fashion. The extent to which these irrelevant features persist, especially in multisensory contexts, remains unclear. This study provides both behavioral and electrophysiological evidence for the

persistence of task-irrelevant cross-modal features in an audiovisual delayed-match-to-sample paradigm. Critically, participants were cued to selectively attend to auditory, visual or audiovisual features. Behaviorally, we observed partial repetition costs for multisensory objects: that is, consistent with prior unisensory findings, changes in task-irrelevant features impaired performance. This interference was particularly strong when auditory features were presented in lateralized positions, i.e., spatially disparate from visual features rather than spatially compatible. Electrophysiological results from two sets of representational similarity analyses (RSA) further clarified these effects. First, comparing activity patterns of attend-auditory and attend-visual conditions to unisensory controls (auditory-only, visual-only) and conjunction conditions revealed partial filtering of task-irrelevant visual features during memory maintenance. In contrast, task-irrelevant auditory features persisted more robustly. In line with behavioral results, the persistence of task-irrelevant auditory features in neural activity patterns was more pronounced with spatially disparate sound presentation. Second, neural activity patterns indicated orientation-specific and frequency-specific representations regardless of attended modality, with task-irrelevant features represented as robustly as task-relevant ones. Together, these findings suggest that multisensory integration strongly promotes feature binding, resulting in memory representations that include even those features deemed irrelevant by task demands.

Retroactive Interference between Working Memory and Episodic Memory: New Insights from the Target Confusability Competition Model (TCC) (14:30 – 16:00)

Daniel Schneider, *Leibniz Research Centre for Working Environment and Human Factors (IfADo, Germany*; **Şahcan Özdemir**, *Leibniz Research Centre for Working Environment and Human Factors (IfADo, Germany*; **Melinda Sabo**, *Leibniz Research Centre for Working Environment and Human Factors (IfADo, Germany; Wu Tsai Institute, Yale University, USA*

This study explores how long-term memory (LTM) is vulnerable to retroactive interference from working memory (WM). Participants learned associations between visual objects and circular locations, which they later had to report from LTM. Between encoding and retrieval, the same objects were used in a WM task, with locations shifted by ~120. We further manipulated WM task conditions to investigate retroactive interference mechanisms: In two conditions, participants were tested on the associated location and either moved the object itself to the desired location or used spatial placeholders for report. Additional conditions assessed the effect of shorter versus longer WM storage durations without testing. A baseline condition involved objects only presented in the LTM task. The target confusability competition model (TCC) estimated memory strength (d-prime) for target reports (LTM retrieval of the associated location) and swap errors (erroneous LTM report of the interfering WM location). Results revealed that swap errors were more prevalent for objects tested during the WM task, while testing method or storage duration did not have an effect. Critically, testing object-location associations in WM increased the memory strength of the interfering locations without affecting memory strength for the target location. This shows that retroactive interference did not result from a weakening of the target representation, but from the fact that WM retrieval of the interfering location led to a more competitive LTM trace. These results provide new insights into the mutual influence of WM and LTM, offering a new perspective for a better understanding of forgetting through retroactive interference.

Reevaluating the Association between Mental Speed, Intelligence and Working Memory Capacity (14:30 – 16:00)

Kathrin Sadus, *University Heidelberg, Germany*; **Anna-Lena Schubert**, *University of Mainz, Germany*; **Sven Lesche**, *University Heidelberg, Germany*; **Wiebke Hemming**, *University Heidelberg, Germany*; **Dirk Hagemann**, *University Heidelberg, Germany*

The relationship between intelligence, working memory capacity (WMC), and information processing speed (IPS) is central to cognitive psychology. While extensive research has explored their interrelations, the specific role of IPS in explaining intelligence differences remains debated. In line with the mental speed hypothesis, prior studies demonstrate moderate but robust associations between reaction time measures and intelligence. To obtain more precise measures of mental speed, researchers have analyzed the latencies of event-related potential (ERP) components associated with higher-order cognitive processes, providing strong evidence for the mental speed account with latent correlations ranging from -.49 to -.89 (Schubert et al., 2017; 2022). However, these findings predominantly stem from decision-related processes, leaving open questions about their generalizability to non-decisional phases, such as WM encoding. This talk provides insights into the relationship between intelligence, WMC and IPS based on the analysis of ERP latencies during WM coding. Using data from 141 participants and a latent state-trait modeling approach, we found no significant association between IPS during WM encoding and intelligence or WMC. These findings challenge the universality of the mental speed hypothesis and suggest that cognitive speed advantages in intelligence primarily emerge during decision-making rather than encoding. Additionally, we observed a relationship between P3 amplitude and WMC, reinforcing its role as a neural marker of WM processing. Our results contribute to the broader discussion of how interindividual differences in intelligence are shaped by distinct neurocognitive mechanisms and highlight the need for an integrated approach combining cognitive neuroscience and differential psychology.

A MATLAB Application for Efficient and Reliable ERP Latency Extraction Using Template Matching (14:30 – 16:00)

Sven Lesche, *Universität Heidelberg, Germany*; **Kathrin Sadus**, *Universität Heidelberg, Germany*; **Dirk Hagemann**, *Universität Heidelberg, Germany*

Neurocognitive processing speed is a fundamental correlate of intelligence and higher-order cognition, making accurate ERP latency extraction essential for studying individual differences and cognitive mechanisms. However, existing methods often require trade-offs between efficiency, objectivity, and reliability. Automatic latency extraction using peak latency algorithms or fractional area latency algorithms often yields unreliable latency values (Sadus et al., 2024). Manual extraction, while accurate, is time-consuming and subjective, whereas traditional automated approaches can be inconsistent. In this talk, we introduce a MATLAB application that provides a user-friendly implementation of a novel template-matching algorithm for ERP latency extraction (Lesche et al., under review). The app streamlines the process by offering an intuitive interface that allows researchers to apply the algorithm with minimal effort. It includes automated rejection or confirmation of latencies based on a user-defined fit threshold, ensuring high data quality while reducing manual workload. Additionally, the app presents results from other selected algorithms for latency extraction, enabling users to compare multiple approaches and select the most suitable method for their data. By integrating automated quality control with interactive visualization, this tool significantly improves efficiency and replicability in ERP analysis. We will demonstrate its functionality and discuss its potential applications for both experimental and individual-differences research, highlighting how it facilitates more precise measurement of neural processing speed.

The Best of Both Worlds? Bridging Behavior and Physiology Using Immersive Virtual Reality (14:30 – 16:00)

Kroczek, Leon; Gado, Sabrina

Interacting with our environment evokes complex responses across behavioral, subjective, and physiological levels. Researchers often face the challenge of achieving a good balance between

naturalistic and unconstrained behavior while ensuring precise and insightful biological readouts. Virtual reality (VR) enables naturalistic (i.e., dynamic and interactive) experiments with simultaneous recording of multimodal psychophysiological and behavioral measures, such as electrophysiology, autonomic measures, eye and body movements. These data can be used to identify characteristic patterns in clinical and healthy samples.

In this symposium, we present the work of five researchers, who use interactive VR paradigms beyond button presses to study the psychophysiology of socio-affective processes.

Sabrina Gado will kick-off the symposium with findings from a recent meta-analysis and an experimental study on the effects of social anxiety on exploration behavior and autonomic responsiveness.

Leon Kroczek will then present how emotional expressions and interpersonal distance influence socio-affective processing in a naturalistic approach task which combines mobile EEG and VR.

Michael Gaebler will present a set of studies on the behavior and psychophysiology of perceiving virtual humans in 3D and immersive VR.

Marius Rubo will present eye-tracking and behavioral data from dyadic interactions in social VR.

Finally, Marta Andreatta will conclude the symposium with a clinical study testing in VR the (possible) beneficial effect of exposure therapy on pathological learning mechanisms in anxiety patients.

In summary, this symposium showcases and highlights VR's potential to exploit rich behavioral patterns allowing for a nuanced understanding of the physiological underpinnings of (mal)adaptive socio-affective processes.

How and When Social Anxiety Manifests: Behavioral and Autonomic Responses in Virtual Social Situations (14:30 – 16:00)

Sabrina Gado, *Julius-Maximilians-Universität Würzburg, Germany*; **Janna Teigeler**, *Julius-Maximilians-Universität Würzburg, Germany*; **Matthias Gamer**, *Julius-Maximilians-Universität Würzburg, Germany*

Virtual reality (VR) has emerged as a promising tool for investigating social behavior. By tracking gaze, movements, and physiological responses, VR facilitates a fine-grained analysis of different aspects of social approach-avoidance tendencies. Adaptive social functioning critically relies on effectively balancing these behaviors with exaggerated social avoidance often being associated with mental disorders such as social anxiety. Here, we present insights from a meta-analysis and two experimental studies exploring which context factors modulate the behavioral and autonomic responses of socially anxious individuals. The meta-analysis comprises 188 studies investigating the effects of trait social anxiety on several outcome variables. It showed that the naturalism of a study setting is a relevant modulating factor. For the 21 included VR studies, we observed an association of social anxiety with heightened subjective distress, increased skin conductance, and decreased visual attention on social stimuli. With two experimental studies (both N =48), we focused on how people adapt after social learning experiences. We found that previous social encounters with friendly or unfriendly virtual agents significantly influenced participants exploration behaviors, including interpersonal distance and spontaneous fixations, as well as their subjective evaluations of these agents. Importantly, trait social anxiety was associated with higher fear ratings and increased interpersonal distance. Although autonomic responses indicated the valence of social encounters, no long-term physiological adaptations persisted during the social approach-avoidance test. This research demonstrates the potential of VR to investigate (mal)adaptive social behavior in conditions resembling real-live encounters.

Close and Angry - How Facial Expressions and Interpersonal Distance Modulate Neural Responses in an Interactive Approach Task (14:30 – 16:00)

Leon O. H. Kroczek, *Regensburg University, Germany*; **Andreas Mühlberger**, *Regensburg University, Germany*

Persons display numerous social and affective cues when engaging in face-to-face social interactions, including facial emotional expressions and interpersonal distance. Interactive partners can use these cues to process another persons intentions or to assess threat in social encounters. However, it remains an open question whether different social cues are processed independent from each other or interactively, i.e. whether emotional information conveyed by proximity can impact processing of facial expressions. To investigate this question, the present study (N = 46) combined a naturalistic approach task in Virtual Reality with mobile EEG measurement. In the study, participants walked towards virtual agents who would react to the approach either at close (1 m) or far (2.5 m) distances by displaying either angry, neutral, or happy facial expressions. ERPs elicited by the agents reaction as well as ratings of valence and arousal were assessed as dependent variables. Results show that close compared to far distances were experienced as less pleasant, more arousing, and resulted in enhanced LPP components. Furthermore, angry expressions were experienced as less pleasant than happy expressions, while emotional expressions in general were more arousing, and elicited a more negative EPN component than neutral expressions. Importantly, however, neither the ratings nor the ERPs indicated an interaction between interpersonal distance and facial emotional expressions (also supported by Bayesian analysis). Overall, our findings suggest that socio-affective information in interpersonal distance and facial emotional expressions is processed independent from each other and that both cues contribute to the evaluation of face-to-face interactions.

Measuring and Enhancing the Neurocognitive Realism of Virtual Humans in 3D and VR (14:30 – 16:00)

Michael Gaebler, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Consortia Neurohum And 3dil**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Fraunhofer Heinrich-Hertz-Institut, Germany; University of Birmingham, UK; University of Stirling, Scotland; University of Victoria, Canada*

Immersive Virtual Reality (iVR) affords the interaction with computer-generated environments, of which virtual humans have become an essential part. Yet, creating realistic and emotive digital representations of humans is still challenging, for example because of the uncanny valley effect, which suggests that highly photorealistic virtual humans that can still be recognized as artificial are unappealing. In social interactions, faces are a particularly important source of information, for example to identify persons and their emotions. While face perception typically happens in 3D, it is often studied with 2D stimuli. I will present results from three sets of behavioural (large-scale online and lab-based) and EEG studies, in which we used 3D-reconstructed or computer-generated faces with different identities, emotional expressions, and stylization levels under 2D and 3D viewing conditions also using iVR technology to investigate (1) the influence of depth information on the identification and psychophysiology of face perception as well as (2) behavioural and physiological indices of realism, particularly zooming into the critical zone of the uncanny valley. The studies are part of two projects, NEUROHUM and 3DIL, whose aims are to integrate neurocognitive indices of realism into the generation of virtual humans and to use realistic 3D faces in iVR to increase eyewitness identification accuracy, respectively. Overall, neurocognitive measures of realistic virtual humans can not only advance neuroscience but also computer graphics (e.g., immersive media) and forensic psychology (e.g., lineup procedures).

Investigating Dyadic Interactions using Social Virtual Reality (Social VR) (14:30 – 16:00)

Marius Rubo, *University of Bern, Switzerland, Switzerland*

Virtual Reality (VR) allows users not only to interact with computerized environments and computer agents in isolation, but also to interact with others in shared worlds. Tracking speech behavior, eye gaze and facial expressions in dyadic interactions in VR, we observed that (1) interaction behavior closely corresponded to patterns known from face-to-face interactions, (2) anonymized communication was not associated with social disinhibition, (3) social anxiety levels had similar effects on interaction behavior as known from face-to-face interactions, (4) participants' tendencies to gaze towards a partner's eye region was psychometrically distinguishable from their tendency to gaze towards eyes of people depicted in images and (5) participants could be identified with high accuracy based on their eye gaze distribution while interacting. While the use of Social VR in psychological research is still in its infancy, the technique may enrich both experimentation and data collection in several fields. I briefly present open-source tools which serve to allow other researchers to reproduce the in-house social VR setup used in my research.

The Effects of Exposure Therapy on Pathological Learning Mechanisms in Anxiety Patients (14:30 – 16:00)

Marta Andreatta, *University Hospital Tübingen, Germany; German Center for Mental Health, Tübingen Germany*

Anxiety disorders are the most prevalent mental disorders and around 30-40% of the patients show relapses of the symptoms after therapy. These patients are characterized by an incapacity to identify safety, responding anxiously in numerous situations. In this study, we investigated whether exposition therapy might improve safety learning. Eighty-nine patients and 37 healthy controls underwent a classical context conditioning in virtual reality (VR). During an acquisition phase, a loud and desperate female scream (unconditioned stimulus, US) was unpredictably presented in one virtual office (threatening context, CTX+) but never in the other office (safety context, CTX-). During an extinction phase, which followed, participants revisited the two contexts, and the US was never delivered. Twenty-eight patients were then re-tested after an exposition therapy. Compared to healthy controls, patients demonstrated stronger physiological defensive responses in the safe context (CTX-) but reported higher subjective anxiety in CTX+. Moreover, patients did not reduce their conditioned anxiety and kept showing stronger defensive verbal as well as physiological responses during extinction. After exposition therapy, subjective anxiety was significantly reduced at the end of the extinction phase but not patients' physiological responses. In summary, extinction of the conditioned anxiety was ameliorated in patients after exposure therapy, but only on the verbal and not on the physiological level. Both the stronger defensive responses in a safe context and the dissociation between the two levels of responses might be implicated in the relapses of the symptoms.

Deciphering Brain States: Dynamics, Cognition, and Behavioral Impact (14:30 – 16:00)

Hilger, Kirsten; Markett, Sebastian

Brain states emerge as recurring patterns of distributed neural activity, shaped by the brains structural and functional networks. These states are fundamental to cognition, reflecting individual differences and offering insight into the neurobiological mechanisms underlying behavior and pathology. Investigating their spatiotemporal dynamics, transitions, and interactions with various

functional processes provides a valuable framework for understanding the brains functional organization and how it shapes individual behavior and thought.

This symposium brings together research that examines brain states in the context of cognitive engagement and behavioral outcomes. Our contributors employ diverse experimental paradigms to elicit specific brain states and use network-based approaches to analyze their properties. The symposium will highlight research exploring brain states arising from cognitive demands, their role in memory and decision-making, and their alterations across the lifespan. Additionally, we will discuss how cognitive trainings and interventions may shape these states, with implications for clinical neuroscience.

The symposium will conclude with a panel discussion on the conceptual and methodological frontiers of brain state research, addressing both the opportunities and challenges of studying dynamic brain activity through means of network neuroscience and machine learning.

The Neural Code of Neuroticism: Insights from Inter-Subject Representational Similarity Analysis (14:30 – 16:00)

Johanna Lea Popp, *University of Würzburg, Germany*; **Martin Weiß**, *University of Würzburg, Germany*; **Joshua Faskowitz**, *Indiana University Bloomington, USA*; **Kirsten Hilger**, *University of Würzburg, Germany*

Neuroticism, the tendency to experience negative emotions such as anxiety, irritability, or emotional instability, is a key risk factor for mental disorders. Therefore, identifying its neurobiological basis, particularly whether there exists a shared neural foundation among individuals, presents an important endeavor. While previous research often falls short in ecological validity due to its focus on brain activity during rest or well-standardized but artificial in-scanner tasks, this preregistered study considers brain activity during movie watching, suggested to more closely resemble individuals real-life experiences. Specifically, we examined whether participants similarity in neuroticism is reflected in the similarity of their brain activity. Further, we tested whether this brain-trait representational similarity is stronger during movie scenes that were rated as particularly relevant to neuroticism, generating insights into the trait-relevance assumption of contemporary personality conceptions. To identify trait-relevant movie scenes, we first conducted an independent online study (N = 80). In the main study, Inter-Subject Representational Similarity Analysis was performed on a subsample of the Human Connectome Project (N = 184) for whom fMRI movie data and neuroticism scores (NEO-FFI) were available. Brain-trait representational similarity was assessed at whole-brain, network, and region-specific levels, while accounting for the influence of trait-relevant contexts. Additionally, statistical mapping to different theoretical models of trait similarity was explored. By linking similarity in neuroticism to shared neural representations during movie watching, our study informs about the location and context-dependent manifestation of its neurobiological foundation, ultimately offering important implications for the diagnosis and treatment of mental health disorders associated with heightened neuroticism.

Network Control Theory in Cognitive Neuroscience: Insights from Rich-Club Organization and Individual Differences (14:30 – 16:00)

Alina Podschun, *Humboldt-Universität zu Berlin, Germany*; **Richard Betzel**, *Humboldt-Universität zu Berlin, Germany*; **Urs Braun**, *Humboldt-Universität zu Berlin, Germany*; **Sebastian Markett**, *Humboldt-Universität zu Berlin, Germany*

Network Control Theory (NCT) offers a powerful framework to explore how the brains structural architecture shapes its dynamic functional states. By modeling the brain as a controllable system, NCT enables us to quantify the energy required to transition between brain states, providing novel insights into structure-function relationships. In this talk, I will introduce the core concepts of NCT and highlight its relevance for cognitive neuroscience, particularly in understanding cognitive control. I will present recent findings from our group showing that the brains rich-cluba densely connected set of hub regionsis surprisingly inefficient in facilitating state transitions, challenging prevailing

assumptions about its central role. Furthermore, I will discuss how NCT-derived metrics can capture individual differences in brain dynamics, offering potential biomarkers for behavior and cognition. Together, these insights position NCT as a key tool for deciphering brain states and their cognitive and behavioral impact.

Modeling Brain Dynamics: Task-Specific and Universal Patterns Through Dynamical Systems Analysis (14:30 – 16:00)

Urs Braun, *Central Institute of Mental Health, Germany*; **Katie Reh**, *Central Institute of Mental Health, Germany*; **Johannes Wolf**, *Central Institute of Mental Health, Germany*

In our study, we investigate the dynamic neural underpinnings of cognitive and emotional processes using the longitudinal fMRI data from the Midnight Scanning Club (MSC) dataset (Gordon et al., 2017). Building on two recent methodological advances in modelling dynamical systems from time-series data the piecewise-linear recurrent neural network (PLRNN) framework for dynamical systems identification (Koppe et al., 2019) and hierarchical dynamical systems modeling (Brenner et al., 2025) we analyze individual and group-level brain dynamics across three different fMRI tasks over multiple imaging sessions. We characterize the extracted dynamical systems using features that described the underlying energy landscape such as bifurcations or attractors and explore how individual differences in these features relate to cognitive performance and behavioral variability. We find 1) task-specific dynamical patterns that differentiate between cognitive processes, with distinct stability profiles observed for working memory, social cognition, and emotion processing tasks, and 2) conserved dynamical features across individuals, suggesting a general organizational principle in brain dynamics during cognitive-emotional tasks. Our findings highlight both task-specific dynamical patterns and conserved features across individuals, revealing a complex interplay between adaptive and fundamental organizational principles in brain dynamics. This study demonstrates the potential of advanced dynamical systems modeling to uncover the temporal structures of neural activity, bridging individual variability with general cognitive mechanisms.

Developmental Trajectories of Thalamocortical Connectivity from Childhood to Young Adulthood (14:30 – 16:00)

Alexandra John, *Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; INM-7, Research Centre Julich, Julich, Germany*; **Alfred Anwander**, *Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Aikaterina Manoli**, *Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; INM-7, Research Centre Julich, Julich, Germany*; **Amin Saberi**, *INM-7, Research Centre Julich, Julich, Germany; Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Bin Wan**, *Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; INM-7, Research Centre Julich, Julich, Germany*; **Boris C. Bernhardt**, *Montreal Neurological Institute and Hospital McGill University, Montreal, Canada*; **Sofie L. Valk**, *Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; INM-7, Research Centre Julich, Julich, Germany*

The human brain undergoes continuous development, with childhood and adolescence being critical periods for cognitive refinement, yet there is also increased susceptibility to neuropsychological disorders (Baum et al., 2020; Larsen & Luna, 2018). During these stages, cortical development has been shown to follow a well-characterized sensory-to-association axis (Sydnor et al., 2023); however, cortical development does not occur in isolation. From the earliest stages, the thalamic subnuclei and cortex interact closely, forming a network essential for sensory perception, cognitive function (Hwang et al., 2022), and the shift between brain states (Müller et al., 2020). Disruptions in this thalamocortical network have been linked to neurodevelopmental disorders (Anticevic et al., 2015; Xia et al., 2012; Zhang et al., 2021). Recent evidence suggests that the trajectory of structural thalamocortical connectivity also follows a sensory-to-association axis (Sydnor et al., 2025). However, how this organizational pattern emerges at the level of individual thalamic subnuclei remains unclear, as does the developmental trajectory of structure-function coupling between subnuclei and cortical regions. In this talk, I will

present our findings on the maturation of thalamocortical connectivity from childhood to young adulthood, focusing on individual thalamic subnuclei and their maturing structure-function relationships. Using diffusion-weighted and resting-state fMRI data from the Human Connectome Project Development (N = 626, ages 521), we computed structural and functional connectivity between thalamic nuclei and cortical parcels, modeling age effects with Generalized Additive Models. Understanding these developmental processes is crucial for uncovering thalamocortical network contribution to functional maturation and may offer new perspectives on neurodevelopmental disorders.

Coffee Break (16:00 – 16:30)

Building Concepts, Space and Memory in Early Brain Development (16:30 – 18:00)

Werkle-Bergner, Markus; Koester, Moritz

Spatial cognition and episodic memory are closely intertwined, sharing a common neural foundation in the entorhinal-hippocampal system. Beyond its well-established role in navigation and memory, recent research in adults suggests that spatial coding mechanisms within this system might serve as a neural and cognitive basis for concept formation and generalization. However, little is known about how this foundational function emerges during early development. How do spatial representations evolve to support not only navigation but also the structuring of knowledge? What role does the maturation of the entorhinal-hippocampal system play in shaping both memory and conceptual learning?

This symposium brings together five cutting-edge studies that investigate these developmental questions from infancy to early childhood using behavioral, neuroimaging, and electrophysiological approaches. The first talk presents longitudinal data on memory development in 4- to 8-year-olds, incorporating structural MRI to examine neuroanatomical changes. The second explores how 18- to 24-month-olds acquire and retain object-location-context associations, shedding light on early spatial learning mechanisms. The third highlights the role of neural oscillations in shaping memory and learning across development. The fourth study examines the relationship between spatial navigation abilities and early hippocampal and entorhinal development in one-year olds. Finally, the fifth talk investigates the relationship between spatial learning and memory formation in 4- to 8-year-olds.

By integrating findings across different ages and methodologies, this symposium advances our understanding of how spatial coding within the entorhinal-hippocampal system supports not only memory but also the broader cognitive structures essential for knowledge organization and concept formation.

The COMIC Study - Investigating Brain and Memory Development in Childhood (16:30 – 18:00)

Tydings M. Mcclary, *Max Planck Institute for Human Development, Berlin, Germany*; **Elisa S. Buchberger**, *Max Planck Institute for Human Development, Berlin, Germany*; **Ann-Kathrin Joechner**, *Max Planck Institute for Human Development, Berlin, Germany*; **Ulman Lindenberger**, *Max Planck Institute for Human Development, Berlin, Germany; Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Berlin, Germany, and London, UK*; **Chi T. Ngo**, *Max Planck Institute for Human Development, Berlin, Germany*; **Markus Werkle-Bergner**, *Max Planck Institute for Human Development, Berlin, Germany*

The mature human memory system strikes a balance between the ability to remember specific details of past events and the capacity to detect regularities across these events for effective generalization to new situations. Transitioning to middle childhood, childrens memories become more detailed, as evidenced by an enhanced ability to differentiate among similar experiences (pattern separation) and to retrieve complete memories from partial information (pattern completion), while generalization skills continually advance as well. During the same period, the hippocampus a brain region strongly implicated in

memory-related processing undergoes structural reorganization of its subfields, which have been differentially linked to the aforementioned memory components. There is cross-sectional evidence suggesting changes in these memory component functions from early to middle childhood. However, longitudinal data tracing their developmental trajectories and covariation while simultaneously assessing changes in neural substrates and mechanisms are currently lacking. The present study addresses this gap by using an accelerated longitudinal design, with three yearly measurements of children aged 4 to 8 years. Our comprehensive approach incorporates a variety of memory tasks testing the different memory components in multiple task settings, alongside structural magnetic resonance imaging (MRI) focusing on the hippocampus and diffusion-weighted MRI. The initial timepoint of the study has been completed with 174 participants. The second will be concluded in August 2025, and the third by June 2026. In this talk, preliminary cross-sectional findings revealing expected age differences in memory performance as well as an outlook on planned data analyses will be presented.

Memories in Motion: Understanding the Dynamic Patterns of Memory Formation and Retention in Early Childhood (16:30 – 18:00)

Annika Werwach, *Max Planck Institute for Human Development, Germany; Max Planck School of Cognition*; **Sarah D. Power**, *Max Planck Institute for Human Development, Germany*; **Marius Fey**, *Max Planck Institute for Human Development, Germany*; **Josefine Hild**, *Max Planck Institute for Human Development, Germany*; **Ulman Lindenberger**, *Max Planck Institute for Human Development, Germany; Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Germany & Max Planck UCL Centre for Computational Psychiatry and Ageing Research, United Kingdom*; **Markus Werkle-Bergner**, *Max Planck Institute for Human Development, Germany*

The second year of life marks a critical transition in episodic memory development, as memory shifts from being rather rigid and short-lived to more flexible and enduring episodic-like forms. This transition coincides with rapid hippocampal maturation and the offset of the infantile amnesia period, which is characterized by the absence of long-lasting episodic memories. However, the mechanisms enabling toddlers to start to form and retain enduring, episodic-like memories remain poorly understood. In this study, we use mobile EEG to examine neural correlates of interindividual differences in how 18- to 20-month-old toddlers encode associative memories and retain them across delays of 1 day, 1 month, and 3 months. In an immersive real-world-like object-location-context association task, toddlers freely navigate their environment to encode and later retrieve memories, offering insights into episodic-like memory formation in a spatial learning context. Preliminary findings from n = 101 toddlers reveal substantial variability in learning and retention, highlighting interindividual differences in the formation and stability of early memory representations. By identifying key predictors of successful memory formation and retention, this research will provide novel insights into how spatial learning mechanisms may support emerging episodic memory in early childhood. More broadly, this study advances our understanding of how foundational memory skills in toddlers evolve and stabilize over time, potentially forming the basis for learning and memory later in life.

Understanding Neural Dynamics Across Development: From Infancy to Adulthood (16:30 – 18:00)

Marlena Baldauf, *University of Regensburg*; **Stefanie Höhl**, *University of Vienna*; **Ole Jensen**, *University of Oxford*; **Radoslaw Cichy**, *Freie Universität Berlin*; **Siying Xie**, *Freie Universität Berlin*; **Christina Maria Schätz**, *University of Vienna*; **Moritz Köster**, *University of Regensburg*

Despite growing interest, the neural rhythms of the developing brain remain poorly understood. The adult visual system is dominated by oscillations in the 38 Hz theta and 814 Hz alpha ranges. Here, we present two studies that look at the development of these two fundamental operating frequencies from infancy into adulthood. In the first study, we

explored resonance phenomena and operating frequencies in the infant visual system using rhythmic visual stimulation. We found that the infant brain responded at the 4Hz theta rhythm following visual stimulation at various frequencies (2-30Hz). Moreover, presenting random flicker sequences elicited a perceptual echo that repeated at 4 Hz. In contrast, the adult visual system exhibited resonance and perceptual echoes in the alpha range. Second, we investigated the functional properties of theta and alpha rhythms in infants aged six and twelve months, children at four and six years and adults using time-frequency and functional connectivity analyses. Preliminary results from infants indicate that theta increases over the first trials and the reduces over multiple presentations, while connectivity increases globally for novel compared to familiar images, suggesting a crucial role of theta in the formation of novel representations. Collectively, these findings underscore the importance of the theta rhythm in early childhood development. Results will be discussed within the framework of two concurrent perspectives.

How Early Motor System Development Promotes Spatial Navigation: An Infant MRI Study (16:30 – 18:00)

Sayani Banerjee, *University of Regensburg, Germany*; **Moritz Köster**, *University of Regensburg, Germany*

During their first year, infants rapidly acquire motor skills - from sitting, to crawling, and eventually walking. This progression has been linked to emerging cognitive abilities, particularly spatial perception. Clearfield (2004) found that infants who can walk (~12 months) performed better in spatial search tasks than crawlers. Regarding the underlying neurodevelopment, Marrus et al., (2018) showed that stronger sensorimotor connectivity correlates with the onset of walking. However, the neural basis of spatial cognition at this developmental stage remains underexplored. The present study investigates two aspects of early motor development. First, we analyze the developmental trajectory of the infant brain, focusing on motor cortical and medio-temporal maturation from birth to 24 months. Using 891 anatomical images from the Baby Connectome Project, we establish normative trajectories that serve as a reference for interpreting locally collected MRI data, in critical brain regions for motor development: premotor area, primary motor cortex, supplementary motor areas, hippocampus and entorhinal cortex, integrated into a maturity metric. Second, we examine how infants motor abilities at 12 months (n=30) influence spatial navigation skills, and how this would be mediated by our neurodevelopmental metric of the infant motor system. Initial findings, based on region volumes, indicate that motor skills positively correlated with spatial navigation abilities ($r(46)=0.30$, $p<.05$), relative voxel size of motor regions ($r(29)=0.39$, $p<.05$) and hippocampal formation ($r(29)=0.38$, $p<.05$). Leveraging big data towards an age adjusted neurodevelopmental metric, will provide an important step in our developing understanding of the neural underpinnings of motor and hippocampal development and their effect on spatial cognition.

Entorhinal Grid-like Codes In 6- to 8-year-old Children (16:30 – 18:00)

Lydia Brundisch, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Berlin, Germany; Department of Psychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Yangwen Xu**, *Department of Psychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*; **Christian Doeller**, *Department of Psychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Kavli Institute for Systems Neuroscience, Norwegian University of Science and Technology, Trondheim, Norway*; **Markus Werkle-Bergner**, *Center for Lifespan Psychology, Max Planck Institute for Human Development, Berlin, Germany*

Grid cells in the entorhinal cortex provide structured scaffolds for spatial, visual, episodic, and conceptual representations. Reports of macroscopic grid-like codes in adolescence suggest a prolonged functional maturation of the entorhinal cortex from middle childhood to young adulthood. However, children typically reach adult-like performance in spatial tasks before age 12. To examine whether the emergence of entorhinal grid-like

codes supports the development of navigation ability and memory in early childhood, we will collect fMRI data from 6- to 8-year-old children conducting an object location memory task. The sample will be sourced from an ongoing longitudinal study on memory development, providing comprehensive structural MRI data and behavioral memory phenotyping. Entorhinal grid-like codes will be identified as the hexadirectional modulation of the BOLD signal of walking directions, and the magnitude of the modulation will serve as an indicator of the functional maturation of the entorhinal cortex. By integrating the macroscopic grid-code proxy with existing longitudinal data, we will examine the relations between the maturation of hippocampal structure, cognition, and functional entorhinal cortex development.

Emerging Methodological Trends in Cognitive Neuroscience: From Substantial Research to Meta-analytic Approaches (16:30 – 18:00)

Kristanto, Daniel; Hutabarat, Yonatan

Cognitive neuroscience is a highly dynamic field that continuously expands our understanding of the brain and cognition. New methods and approaches to data collection and analysis, driven by both focused empirical studies and innovative meta-analytic approaches, are shaping the field. This symposium brings together early career researchers from transdisciplinary backgrounds to highlight emerging trends in psychological and neuroimaging research.

Hutabarat et al. will present findings on how humans escape biologically relevant lethal threats, highlighting the use of wireless virtual reality to study behavior in naturalistic settings. Deng et al. will introduce a novel Magnetic Resonance Imaging-compatible walking-like pedal device to examine differences in cognitive-motor dual-task performance between young and older adults. This methodology can sensitively detect early cognitive and motor decline and its neural underpinnings in healthy older adults. Heydari et al. will present the Iranian Emotional Face Database, an online, validated dataset of Middle Eastern faces designed to enhance cross-cultural research on emotion recognition. She will also discuss facial color variations in shaping emotional and health judgments and address how emotional dynamics influence social decision-making in economic contexts and cooperative behavior. Shifting to meta-scientific approaches, Short et al. will demonstrate how machine learning can enhance sampling efficiency in large Electroencephalography preprocessing multiverse analyses. Finally, Kristanto et al. will explore how a systematic digital knowledge space may advance emerging research trends in precision neuroimaging.

Taken together, these presentations illustrate new research approaches across cognitive neuroscience and discuss how advanced empirical and meta-analytical methods can benefit the field.

Behavioral Patterns of Human Escape in Virtual Reality (16:30 – 18:00)

Yonatan Hutabarat, *University of Bonn, Transdisciplinary Research Area Life and Health, Centre for Artificial Intelligence and Neuroscience, Bonn, Germany*; **Juliana K. Sporrer**, *Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute of Neurology, University College London, London, UK.*; **Jack Brookes**, *Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute of Neurology, University College London, London, UK.*; **Sajjad Zabbah**, *Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute of Neurology, University College London, London, UK.*; **Lukas Kornemann**, *University of Bonn, Transdisciplinary Research Area Life and Health, Centre for Artificial Intelligence and Neuroscience, Bonn, Germany*; **Dominik R. Bach**, *University of Bonn, Transdisciplinary Research Area Life and Health, Centre for Artificial Intelligence and Neuroscience, Bonn, Germany; Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute of Neurology, University College London, London, UK.*

When confronted with a threat, animals often display rapid, species-specific defensive behaviors. However, human-specific defensive behaviors remain largely unknown and are challenging to investigate due to ethical constraints in studying real-life threat scenarios. Understanding these behaviors is however crucial, as individual variation in human defense is hypothesized to predict psychiatric risk. Here, we utilize a wireless virtual reality

platform in which participants forage for fruits in a naturalistic environment and must evade or escape from biologically relevant lethal threats. Across three independent experiments, we show that when escaping to a fixed shelter location, humans exhibit a specific dominant movement sequence that differs from those observed in many other mammals. Humans tend to turn their head towards an approaching threat and then continue a body turn into the same direction, often using the contralateral foot first, before running away. Furthermore, we discuss deviations from this dominant pattern and identify predictors of unsuccessful escape. We anticipate that these results will allow quantifying the impact of modulating factors, help elucidate the neural control of escape, and assess deviations in clinical conditions.

A Novel MRI-Compatible Cognitive-Motor Paradigm for Unveiling Neural Substrates of Dual-Task Performance in Aging (16:30 – 18:00)

Yan Deng, *Department of Psychology, University of Oldenburg, Germany*; **Tina Schmitt**, *Neuroimaging Unit, University of Oldenburg, Germany*; **Christiane Thiel**, *Department of Psychology, University of Oldenburg, Germany*

Cognitive-motor dual tasks are widely used to assess cognitive and motor decline, as well as fall risk in older adults. While behavioral studies on dual-tasking are established, neuroimaging investigations remain limited due to the technical challenges of measuring walking-like activity in magnetic resonance imaging (MRI) environments. This study introduces an approach to capture gait-like foot movements during cognitive-motor dual tasks in MRI settings while mitigating head motion artifacts. We applied an MRI-compatible pedal device that enables precise measurement of walking-like foot movement during a cognitive-motor dual-task paradigm. Forty-three older (aged 5080) and twenty younger adults (aged 2039) participated. To minimize head motion, a plastic forehead band was applied, allowing participants to perceive and self-regulate their head movements while pedaling. Post-acquisition, we used a quality control pipeline for automated MRI data evaluation and denoising implemented within the CONN toolbox. Functional MRI data underwent scrubbing, motion regression and aCompCor. Whole-brain task-based functional connectivity was computed across 164 HPC-ICA networks and Harvard-Oxford atlas regions and compared between older and younger adults. The use of the forehead plastic band effectively minimized head motion. After scrubbing, the mean framewise displacement was reduced to 0.15 mm, comparable to resting-state studies. Group-level whole-brain functional connectivity analysis revealed that older adults exhibited weaker connectivity primarily in the basal ganglia, a key region involved in motor learning and control. Our study demonstrates the feasibility of an MRI-compatible cognitive-motor dual-task paradigm with effective head motion control and highlights the basal ganglia's role in age-related decline of dual-task performance.

Advancing Cross-Cultural Emotion Research: The Iranian Emotional Face Database and Facial Color Perception (16:30 – 18:00)

Faeze Heydari, *Georg-August Universität Gottingen, Germany*

Cognitive neuroscience increasingly relies on high-quality datasets and refined methodologies to study emotion and face perception across cultures. A major challenge in this field is the underrepresentation of Middle Eastern facial stimuli in existing databases, limiting the generalizability of findings. To address this gap, I present the Iranian Emotional Face Database (IEFD)a validated dataset of Middle Eastern faces with systematically categorized emotional expressions. In line with open science principles, the database and validation materials are freely available to researchers upon request. The database was validated through an online rating framework, where participants assessed emotional intensity, accuracy, valence, and genuineness, ensuring its reliability for cross-cultural research. Beyond categorical emotions, subtle visual cues such as facial color variations play a crucial role in emotional and health-related judgments. Our study

investigates how color-based facial cues influence emotion and vitality perception, extending previous findings on the role of skin tone variations in social cognition. Using controlled image manipulations and behavioral assessments, we provide insights into how facial color dynamics shape emotional processing. These advancements offer valuable tools for researchers studying face and emotion recognition, bridging gaps in cross-cultural affective science. By combining validated stimulus development with systematic perceptual analysis, this work highlights the importance of diverse datasets and reproducible methodologies in cognitive neuroscience.

Active Learning to Sample from and Estimate Large EEG Preprocessing Multiverse Analyses (16:30 – 18:00)

Cassie Ann Short, *Carl von Ossietzky Universität Oldenburg, Germany*; **Andrea Hildebrandt**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Robin Bosse**, *Universität Hildesheim, Germany*; **Metin Özyağcılar**, *Universität Hamburg, Germany*; **Stefan Debener**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Katharina Paul**, *Universität Hamburg, Germany*; **Jan Wacker**, *Universität Hamburg, Germany*; **Daniel Kristanto**, *Carl von Ossietzky Universität Oldenburg, Germany*

The high degree of analytical flexibility in electroencephalography (EEG) preprocessing presents a major challenge for replicability. Numerous defensible data processing pipelines exist for the same dataset to answer the same research question, creating uncertainty about the robustness of a result to variations in data processing choices. In a multiverse analysis, all equally defensible pipelines are computed and the robustness of the result to these variations is reported. In neuropsychology, the large number of defensible pipelines may make exhaustive computation impractical. In such cases, a representative subset of pipelines must be sampled, and robustness is reported for the sample. However, different sampling methods may yield different robustness results, introducing what we term multiverse sampling uncertainty. We present the first application of active learning to sample from a large EEG multiverse analysis and use that sample to estimate the full multiverse. Specifically, we computed 528 pipelines quantifying the Late Positive Potential (LPP) in an emotion classification task predicting extraversion scores from LPP amplitude, and compared random, stratified, and active learning sampling approaches in terms of the representativeness of the distribution of model fits to that of the full multiverse. Our results highlight variability between sampling methods, with the active learning most closely representing the median model fit of the full multiverse. We discuss the need for representative pipeline sampling in EEG multiverse analyses, and highlight active learning as a promising approach. We provide an open-source script to facilitate reporting of multiverse sampling uncertainty, and to improve replicability in large-scale EEG multiverse analyses.

Advancing Individualized Neuroimaging Research through a Systematic Knowledge Space (16:30 – 18:00)

Daniel Kristanto, *Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany*; **Daniela Rodriguez De Castro**, *Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany*; **Cosku Inceler**, *Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany*; **Carsten Gießing**, *Department of Psychology, Carl von Ossietzky Universität Oldenburg, Germany*

An emerging trend in neuroimaging research is to optimize the individuality of neural and behavioral measures to improve the strength and robustness of brain-behavior associations. Various methods have been proposed, yet a lack of systematic evaluation has led to fragmented research and increased researcher degrees of freedom, potentially exacerbating the replication crisis. To address this, we propose a knowledge space: a structured platform for collecting and integrating studies, as seen in initiatives such as the Earth System Model and METEOR projects. Given the growing importance of individualized neuroimaging, the establishment of a systematic knowledge space is expected to enhance coherence and accelerate scientific progress in the field. This talk

will present emerging features of a systematic knowledge space for individualized neuroimaging. First, we will review key advancements in individuality-focused neuroimaging methods, such as individualized brain networks. Next, the concept of a knowledge space will be outlined, detailing its essential components and the ideal environment for its implementation. As a foundational step, we will present a systematic taxonomy derived from literature mining on individuality methods in neuroimaging, forming the first component of the knowledge space. Additionally, we will present an empirical study that evaluates and compares these methods. The results will serve as a second component of the knowledge space, aiming to map associations between methods and their empirical outcomes. Taken together, this talk will highlight two key points: the rise of individuality-focused neuroimaging research, and a novel systematic approach to making this research trend more cohesive and impactful.

The Bio-Psychological Intricacies of Social Bonds (16:30 – 18:00)

Blasberg, Jost Ulrich; **Schneider, Ekaterina**

Social bonds come in a variety of qualities and quantities, stretching from early life attachment to maternal and paternal care-givers, across romantic relationships to life-long friendships. As a highly complex phenomenon, they can be understood on a social, biological and psychological level. This symposium aims at exploring various aspects of the bio-psychological intricacies of human relationships, both in the laboratory and in everyday life.

Eileen Lashani will be presenting a study on both physiological and psychological countertransference reactions to different attachment narratives. In her study, participants showed differential psychological, heart rate and skin-conductance reactivity when confronted with secure, avoidant or anxious attachment experiences.

Next, Ekaterina Schneider will report on how childhood touch experiences, current intimate touch, and attitudes toward touch relate to social relationships, mental health, and hormonal states in everyday life.

Expanding from the individual to the dyadic level, Magdalena Degering will introduce a study on empathic stress in friendships, where one dyad member faces a psychosocial stressor while the other initially observes passively before being permitted to provide help. Preliminary data on helping behavior and its determining factors will be presented.

Last, Dora Hopf will expand the social bond from the laboratory to everyday life, examining psychoneuroendocrinological synchrony in older couples. Cortisol, oxytocin and alpha-amylase dyadic covariation were investigated both in terms of their overall linkage and the potential moderation of real life events.

Measuring the Unconscious - Physiological and Psychological Countertransference Reactions to Attachment Narratives (16:30 – 18:00)

Eileen Lashani, *Jena University Hospital, Germany*; **Fabia Valerie Rehde-Bytyqi**, *Jena University Hospital, Germany*; **Josef Tatschl**, *University of Graz, Austria*; **Bernhard Strauß**, *Jena University Hospital, Germany*; **Veronika Engert**, *Jena University Hospital, Germany; German Center for Mental Health (DZPG, partner site Halle-Jena-Magdeburg, Germany; Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Jena-Magdeburg-Halle, Germany*

Social relationships are central to our well-being, yet they can also be a source of distress. The psychodynamic concept of countertransference refers to the positive and negative emotional responses that arise in social interactions, shaped by both the interaction partner and own past experiences. Attachment theory suggests that these responses may be influenced by underlying attachment representations, which shape how individuals perceive and emotionally respond to others, and how others respond to them in return. This study investigates how prototypical narratives from individuals with different attachment representations elicit distinct countertransference responses in listeners.

Specifically, we examine whether attachment narratives not only evoke psychological and social reactions but also manifest physiologically in heart rate, respiration, and skin conductance. A sample of 100 healthy participants listened to secure, avoidant, and anxious attachment narratives in randomized order. After each audio sequence, they reported their socio-emotional reactions via questionnaires. Physiological markers were derived from continuous ECG, respiration and electrodermal measurements throughout the session. Results indicated that well-being declined after exposure to the avoidant and anxious attachment narratives. However, only the avoidant narrative elicited negative countertransference reactions and was linked to reduced concentration in listeners. While average physiological responses did not differ significantly across narratives, an analysis of temporal dynamics revealed distinct reactivity patterns for each attachment style. These findings enhance our understanding of how attachment experiences shape interpersonal interactions, particularly regarding countertransference. Beyond everyday social interactions, this research contributes to a more comprehensive empirical framework for countertransference processes, a key component of psychodynamic psychotherapy.

Associations of Childhood Touch Experiences and Adult Intimate Touch with Current Social Relationships, Mental Health, and Hormonal Stress Regulation (16:30 – 18:00)

Ekaterina Schneider, *Institute of Medical Psychology, Heidelberg University Hospital; Heidelberg University; German Center for Mental Health (DZPG, partner site Heidelberg/Mannheim/Ulm*; **Charlotte Raithel**, *Institute of Medical Psychology, Heidelberg University Hospital; Heidelberg University*; **Dora Hopf**, *Institute of Medical Psychology, Heidelberg University Hospital; Heidelberg University*; **Dirk Scheele**, *Department of Social Neuroscience, Faculty of Medicine, Ruhr University Bochum; Research Center One Health Ruhr of the University Alliance Ruhr, Ruhr University Bochum*; **Paula Trotter**, *Research Centre for Brain & Behaviour, School of Psychology, Liverpool John Moores University*; **Svea Franz**, *German Center for Mental Health (DZPG, partner site Heidelberg/Mannheim/Ulm; Department of General Psychiatry, Center for Psychosocial Medicine, Heidelberg University Hospital*; **Corina Aguilar-Raab**, *Clinical Psychology, Interaction- and Psychotherapy Research, Institute for Compassionate Awareness and Interdependence Research and Practice, School of Social Sciences, University of Mannheim*; **Beate Ditzen**, *Institute of Medical Psychology, Heidelberg University Hospital; Heidelberg University; German Center for Mental Health (DZPG, partner site Heidelberg/Mannheim/Ulm*; **Monika Eckstein**, *Institute of Medical Psychology, Heidelberg University Hospital; Heidelberg University*

Interpersonal affectionate touch plays a crucial role in social bonding, stress regulation, and psychological well-being. However, individual differences in past touch experiences and attitudes toward touch remain understudied. This study aimed to validate the German version of the Touch Experiences and Attitudes Questionnaire (TEAQ-G) and investigate how childhood touch experiences, current intimate touch, and attitudes toward touch relate to social relationships, mental health, and psychobiological states in everyday life. Data from 1,319 study participants suggest good psychometric properties of the TEAQ-G, confirming its reliability and validity as a tool for assessing touch experiences and attitudes. Regression analyses revealed that more positive childhood touch and current intimate touch were associated with lower levels of attachment avoidance, stress, anxiety, depression, and loneliness, as well as higher resilience, family functioning, and relationship satisfaction. These findings were further supported by ecological momentary assessment data from 254 subjects, associating affectionate touch experiences with more favorable daily psychobiological states, including lower levels of stress, anxiety, loneliness, and burden related to the COVID-19 pandemic, lower cortisol, and moderately higher salivary oxytocin levels. Moreover, both childhood touch experiences and attitudes toward intimate touch significantly moderated the relationship between daily affectionate touch reports and individuals psychobiological stress response and well-being. Our results emphasize the developmental importance of early touch experiences and highlight the lasting impact of both early and ongoing touch on attachment, social relationships, psychological well-being, and hormonal responses in everyday life.

Step Up or Step Back? Helping Behavior Under Empathic Stress (16:30 – 18:00)

Magdalena Degering, *Institute of Psychosocial Medicine, Psychotherapy and Psychooncology, Jena University Hospital, Friedrich-Schiller University, Jena, Germany; German Center for Mental Health (DZPG, partner site Halle-Jena-Magdeburg; Center for Intervention and Research in adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Germany*; **Tim Büchner**, *Computer Vision Group, Friedrich Schiller University, Jena, Germany*; **Veronika Engert**, *Institute of Psychosocial Medicine, Psychotherapy and Psychooncology, Jena University Hospital, Friedrich-Schiller University, Jena, Germany; German Center for Mental Health (DZPG, partner site Halle-Jena-Magdeburg; Center for Intervention and Research in adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C, Halle-Jena-Magdeburg, Germany*

Social bonds play a vital role in navigating challenging life situations. While individuals experiencing distress can benefit from the support of close others, these same close others are also susceptible to the transmission of stress through mere observation. This phenomenon, known as empathic stress, is typically studied in controlled dyadic laboratory paradigms, where one dyad member, the target, is exposed to a stressor while the other, the observer, passively observes the situation. However, in real-life scenarios, observers are rarely passive bystanders; rather, they often have the opportunity to intervene or provide support. This necessitates an accurate assessment of the target's distress, which in turn enables an appropriate and effective response. We introduce a modified empathic stress paradigm that extends the passive observation approach by incorporating a helping option for a subset of observers. In a sample of 80 same-sex friend dyads, one group (N = 30) underwent the standard empathic Trier Social Stress Test (TSST), in which the target was confronted with a psychosocial stressor and the observer passively observed the situation. In contrast, a second group (N = 50) experienced a similar paradigm, but after a predefined time point, observers were given the opportunity though not required to support the target. Preliminary findings focusing on helping behavior, examining sex differences in helping propensity and motivation, as well as autonomic stress responses in both groups, will be presented.

Hormonal Synchrony in Older Couples' Everyday Life: The Role of Situational Stressors and Buffers (16:30 – 18:00)

Dora Hopf, *Institute of Medical Psychology, Heidelberg University Hospital, Heidelberg, Germany; Heidelberg University, Heidelberg, Germany*; **Corina Aguilar-Raab**, *Institute of Medical Psychology, Heidelberg University Hospital, Heidelberg, Germany; Heidelberg University, Heidelberg, Germany; Clinical Psychology, Interaction and Psychotherapy Research, Faculty of Social Sciences, University of Mannheim, Mannheim, Germany*; **Johanna Ulrike Gödde**, *Institute of Medical Psychology, Heidelberg University Hospital, Heidelberg, Germany*; **Ekaterina Schneider**, *Institute of Medical Psychology, Heidelberg University Hospital, Heidelberg, Germany; Heidelberg University, Heidelberg, Germany*; **Beate Ditzen**, *Institute of Medical Psychology, Heidelberg University Hospital, Heidelberg, Germany; Heidelberg University, Heidelberg, Germany; German Center for Mental Health (DZPG, partner site Heidelberg/Mannheim/Ulm*; **Monika Eckstein**, *Institute of Medical Psychology, Heidelberg University Hospital, Heidelberg, Germany; Heidelberg University, Heidelberg, Germany*

Synchrony in physiology in romantic couples has been suggested to be a result of joint interaction and co-regulation of stress and affect. However, it is subject of debate whether synchrony in endocrine levels - especially in oxytocin - is generally beneficial or if a reciprocal transmission of stress may even be stress-increasing. The aim of this study was to investigate hormonal synchrony in older couples in relation to situational mindfulness, relationship conflict (quarreling), as well as situational resilience and subjective stress levels. A total of N = 26 individuals (i.e., N = 13 couples) aged between 52 and 75 years provided saliva samples and self-report measures 12 times over the course of 2 days (312 measures in total). Superior to randomly scrambled dyads, multilevel models predicted cortisol, alpha-amylase, and oxytocin levels from one partner for the other. Synchrony was higher at times of high levels of quarreling but mitigated in moments of high mindfulness. Moreover, oxytocin synchrony was reduced in couples exerting higher average levels of stress. We interpret this finding as buffering personal factors to protect against the transmission of dyadic stress. To draw implications for clinical interventions to

promote these factors and given the preliminary character of the sample and the effects, future studies need to systematically expand this field of research and application.

Building Knowledge Structures (16:30 – 18:00)

Barnaveli, Irina; Greve, Andrea

Humans have a remarkable ability to extract and learn abstract patterns from experience and organise them into mental models that guide behavior. This symposium brings together current research from studies using behavioural, fMRI and intracranial recordings alongside computational models to investigate the mechanisms driving the formation of abstract knowledge structures and asks how these structures might facilitate the learning of new episodes and action representations.

This symposium will start with a talk by Lukas Kunz, who will showcase how representations of objects and places interact during hippocampal ripples to support the formation of associative memory in humans. In a second talk, Irina Barnaveli will then demonstrate how the hippocampal cognitive maps can guide new motor interactions with the world by linking perception to action. The third talk by Andrea Greve then moves the focus to the question how knowledge structures or schema can guide the formation of new episodic memories. The talk will discuss how violations of expectations influence episodic memory, but also how expected events can improve episodic memory. Building on this, Salma Elnagar will address the question how spatial schemas support new episodic learning under varying degrees of uncertainty. This talk will discuss the conditions under which schema can either aid or hinder learning. Finally, Mirko Thalmann will conclude the symposium by presenting behavioural and computational evidence demonstrating how regularities shared between different chunks of information, i.e., motifs, can be used to retrieve sequences from memory.

Temporal Binding of Object- and Place-specific Neurons During Human Associative Memory (16:30 – 18:00)

Lukas Kunz, *University Hospital Bonn, Germany*

The hippocampus and its surrounding medial temporal lobe regions combine the diverse features of our experiences into holistic memory representations. Objects and places are key features that the memory system needs to represent to facilitate associative memories for what happened where. In my talk, I will present evidence for single-neuron representations of objects and places in the human medial temporal lobe. I will describe how these representations interact with each other during hippocampal ripples to support associative memory in humans.

Hippocampal-entorhinal Cognitive Maps and Cortical Motor System Represent Action Plans and Their Outcomes (16:30 – 18:00)

Irina Barnaveli, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Simone Vigano**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Center for Mind/Brain Sciences, University of Trento, Rovereto, Italy*; **Daniel Reznik**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Patrick Haggard**, *Institute of Cognitive Neuroscience, University College London, UK*; **Christian F. Doeller**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Kavli Institute for Systems Neuroscience, NTNU, Trondheim, Norway*

Efficiently interacting with the environment requires weighing and selecting among multiple alternative actions based on their associated outcomes. However, the neural mechanisms underlying these processes are still debated. In this talk, I will present evidence that forming relations between arbitrary action-outcome associations involve building a cognitive map. Using a novel immersive virtual reality paradigm, participants learned 2D abstract motor action-outcome associations and later compared action combinations while their brain activity was monitored with fMRI. We observed a hexadirectional modulation of the activity in entorhinal cortex while participants

compared different action plans. Furthermore, hippocampal activity scaled with the 2D similarity between outcomes of these action plans. Conversely, the supplementary motor area represented individual actions, showing a stronger response to overlapping action plans. Crucially, the connectivity between hippocampus and supplementary motor area was modulated by the similarity between the action plans, suggesting their complementary roles in action evaluation. I will discuss the process of action evaluation and selection in the context of cognitive mapping and how our findings challenge classical models of memory taxonomy.

The Role of Surprise and Schema in Building Episodic Memories (16:30 – 18:00)

Andrea Greve, *MRC CBU, United Kingdom*

Episodic memories are not inscribed on a blank slate, rather encoding is shaped by what we already know. It is widely established that episodic memory is facilitated for events that are congruent with our prior knowledge, or schema. However, superior memory also occurs for novelty or events that conflict with a schema, i.e., cause a prediction error. In this talk I outline a theoretical framework, SLIMM, which predicts that episodic memory is a U-shaped function of expectancy, and that the two ends of this U-shape are functionally dissociable, since they depend on different neural systems. I will showcase empirical evidence which uses naturalistic stimuli and taps into well-established pre-experimental schemas. A series of pre-registered studies confirms that memory is better for both highly expected and highly unexpected events compared to neutral events. A second key prediction of SLIMM is that these two ends of the U-shape correspond to different memory processes: recollection of unexpected information and familiarity for expected information. I will explore new insights into the interplay between novelty, expectancy and episodic memory, highlighting theoretical approaches and future directions for understanding how prior expectations shape episodic learning.

Prior Knowledge and Memory Encoding: Investigating the Influence of Congruency and Incongruency on Learning (16:30 – 18:00)

Salma Elnagar, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Nicholas Menghi**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany*; **Andrea Greve**, *MRC Cognition and Brain Sciences Unit, University of Cambridge*; **Christian Doeller**, *Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Kavli Institute for Systems Neuroscience, Jebsen Center for Alzheimers Disease, Norwegian University of Science and Technology, Trondheim, Norway*

Encoding new memories takes place against the backdrop of a rich library of schemas acquired through ones life. Several studies show that schemas strengthen encoding and accelerate recall of new memories that are in agreement with it (congruent), while others show the opposite pattern where prediction violation facilitates learning. To reconcile the contradictory findings in the literature, the schema-linked interaction between the medial temporal and medial prefrontal regions (SLIMM) model postulates that both highly congruent and highly incongruent information with a schema benefit the process of consolidation due to different learning systems in the brain. However, the SLIMM model remains under scrutiny since empirical evidence is scarce to support its hypotheses. Furthermore, the neural underpinnings of such learning processes remain unknown. While some models suggest a trade-off between the medial prefrontal cortex (mPFC) and the medial temporal lobe (MTL) for congruent and incongruent effects respectively, other models predict an essential role of MTL structures in encoding information congruent to existing knowledge structures. We use behavioural methods and fMRI to understand whether and how the representation of prior knowledge enhance encoding and retrieval of new events. We developed a novel spatial schema paradigm, which compares three conditions of varying degrees of congruency to previous knowledge. Our results demonstrate a mnemonic advantage for congruent events, while incongruent events and those lacking a strong prior schema exhibit a disadvantage, suggesting that reaffirming

expectations facilitates learning. In the concurrent fMRI study, we compare systems in the brain that support learning with a prior and without.

Two Types of Motifs Improve Memory Recall (16:30 – 18:00)

Shuchen Wu, *Allen Institute, United States of America*; **Mirko Thalmann**, *Helmholtz Munich, Germany*; **Eric Schulz**, *Helmholtz Munich, Germany*

Previous work has investigated how transition probabilities and chunks help retrieve sequences from memory. Here, we ask whether people can make use of regularities shared between different chunks, which we call abstract motifs. In two experiments, we empirically tested whether people learn and use two different motifs in a sequence recall task: projectional motifs and variable motifs. Projectional motifs are defined as a common theme shared by sequences of different items. Variable motifs include portions with fixed items and a portion with items that are subject to change. The results show that people use both types of motifs in a transfer test in which sequences are constructed with items not encountered during training. The use of motifs leads to improved recall relative to a baseline, consistent with the predictions of our new computational model of motif learning.

Cognition, Hearing & Tinnitus: Mechanisms and Implications (16:30 – 18:00)

Rosemann, Stephanie; Ockelmann, Julian

Age-related hearing loss, a bilateral sensorineural impairment affecting higher frequencies, is highly prevalent among older populations. Its impact extends beyond mere difficulties in speech comprehension, leading to increased listening effort and a decrease in cognitive resources available for other domains. Moreover, hearing loss is one of the primary risk factors for developing tinnitus, the phantom perception of sound, mostly perceived as ringing in the ear without external stimulation. Emerging research suggests a potential link between tinnitus perception and cognitive impairments, alongside difficulties in speech comprehension.

Thus, unravelling the underlying neuro-cognitive mechanisms is crucial, alongside the development of effective intervention strategies and targeted training programs. In this symposium we intend to address these challenges with the aim to untangle the complex interplay of age-related hearing loss, tinnitus, cognitive functions, and speech perception, utilizing results from behavioral assessments, neuroimaging and intervention studies.

Lukas Ruttiger (Tübingen) will provide new insights in the role of stimulus onset contributions to speech comprehension that exist dependent and independent of aging and hearing loss. Julian Ockelmann (Zurich) will explore the potential benefits of auditory-cognitive training for treating speech comprehension deficits in older adults. Stephanie Rosemann (Oldenburg) will delve into the effects of chronic tinnitus, accompanied by hearing loss, on speech-in-noise perception and cognitive functions. Rodrigo Donoso-San Martin (Tübingen) will elucidate the relation of fast auditory processing deficits and cortical changes in tinnitus using for the first time the optical pumped magnetometer (OPM) MEG technology that promised new cortical resolution highly relevant for hearing research.

Stimulus Onset Contributions to Speech Comprehension (16:30 – 18:00)

Lukas Ruttiger, *University of Tübingen, Germany*; **Jakob Schirmer**, *University of Tübingen, Germany*; **Konrad Dapper**, *University of Tübingen, Germany; Technical University Darmstadt, Germany*; **Stephan Matthias Wolpert**, *University of Tübingen, Germany*; **Marjoleen Wouters**, *Ghent University, Belgium*; **Katharina Bader**, *University of Tübingen, Germany*; **Wibke Singer**, *University of Tübingen, Germany*; **Etienne Gaudrain**, *Universite Lyon, France; University Medical Center Groningen (UMCG, The Netherlands*; **Deniz Baskent**, *University Medical Center Groningen (UMCG, The Netherlands*; **Sarah Verhulst**, *Ghent University, Belgium*;

Christoph Braun, *University of Tübingen, Germany; University of Trento, Rovereto, Italy*; **Matthias Munk**, *Technical University Darmstadt, Germany*; **Ernst Dalhoff**, *University of Tübingen, Germany*; **Marlies Knipper**, *University of Tübingen, Germany*

The slowing and reduction of auditory responses in old age, which promote cognitive and speech processing deficits, are currently subject to controversy, as they are linked to either central brain atrophy or a slowdown in neural processing from the periphery. We examined young, middle-aged, and old individuals with and without hearing threshold loss using pure-tone (PT) audiometry, short-pulsed distortion-product otoacoustic emissions (pDPOAE), auditory brainstem responses (ABR), auditory steady state responses (ASSR), syllable discrimination performance in quiet and noise, and EEG responses to syllables. Speech comprehension deficits were identified by the OLSA performance corrected for age and pure tone threshold (PTT) and age. After correction for age and PTT, poor speech comprehension was associated with differences in cochlear amplifier performance and ABR wave latency shift. Furthermore, poor speech comprehension was also associated with phoneme-induced thalamic delay (EEG). We discuss the observed differences in the amplitude and delays of EEG responses in the context of differences in responses to phonemes requiring either temporal fine structure coding (TFS, below the phase-locking limit) or temporal envelope coding (TENV, above the phase locking limit). The data suggest possible new predictors of altered speech comprehension in quiet and ipsilateral noise, linking deficits in the pre-neural input to neocortical activity. Work supported by ERA-NET NEURON JTC 2020: BMBF 01EW2102 CoSySpeech and FWO G0H6420N; IZKF Promotionskolleg, VICI Grant (Grant No. 918-17-603), NOW, ZonMw.

Auditory-Cognitive Training Improves Naturalistic Speech-in-Noise Comprehension in Older Adults with Hearing Loss (16:30 – 18:00)

Julian Ockelmann, *Department of Computational Linguistics, University of Zurich, Zurich, Switzerland; International Max Planck Research School on the Life Course: Evolutionary and Ontogenetic Dynamics (LIFE; Language & Medicine Center Zurich, Competence Center of Medical Faculty and Faculty of Arts and Sciences, University of Zurich, Zurich, Switzerland*; **Sigrid Scherpiet**, *Sonova AG, Research & Development, Stafa, Switzerland*; **Maren Stropahl**, *Sonova AG, Research & Development, Stafa, Switzerland*; **Nathalie Giroud**, *Department of Computational Linguistics, University of Zurich, Zurich, Switzerland; International Max Planck Research School on the Life Course: Evolutionary and Ontogenetic Dynamics (LIFE; Language & Medicine Center Zurich, Competence Center of Medical Faculty and Faculty of Arts and Sciences, University of Zurich, Zurich, Switzerland*

Older adults with hearing loss often struggle to understand speech in noisy environments - a challenge that hearing aids alone do not fully address. One promising complementary approach is auditory-cognitive training, which targets age-related declines in top-down cognitive functions that support speech processing. In this talk, we explore the potential of gamified, adaptive, and self-guided auditory-cognitive training as a way to support speech-in-noise comprehension (SINC) in older adults with hearing loss. Data come from a randomized controlled trial (N = 55; ages 6582), in which participants completed either a four-week auditory-cognitive training program or an active control involving foreign language learning. Pre- and post-training assessments included a naturalistic SINC task using conversational speech masked by cafeteria noise, along with cognitive measures of working memory, selective and divided attention, and phonological short-term memory. Participants in the experimental group showed greater gains in speech comprehension accuracy than controls, particularly under higher noise conditions. Improvements were also observed on trained cognitive tasks across memory and attentional domains. However, while SINC improvements were treatment-specific, cognitive enhancements were not consistently distinct between groups. Additionally, no effects were found for subjective hearing ratings, perceived listening effort, or standard speech-in-noise intelligibility. These findings contribute to a growing body of research supporting the use of auditory-cognitive training to enhance communication in aging populations. They also highlight the need for future work to clarify mechanisms of transfer and optimize training protocols for broader cognitive and perceptual outcomes.

The Impact of Chronic Tinnitus on Cognitive Functions and Speech-in-Noise Perception (16:30 – 18:00)

Stephanie Rosemann, *Carl von Ossietzky Universität Oldenburg, Germany; Cluster of Excellence Hearing4all, Carl von Ossietzky Universität Oldenburg, Oldenburg, Germany*; **Filiz Turan**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Leonie Späth**, *Carl von Ossietzky Universität Oldenburg, Germany*; **Christiane Thiel**, *Carl von Ossietzky Universität Oldenburg, Germany; Cluster of Excellence Hearing4all, Carl von Ossietzky Universität Oldenburg, Oldenburg, Germany*

Tinnitus is the phantom perception of sound without any external stimulation and can be perceived as whistling, buzzing or ringing in the ear. It affects approximately 10-20% of the population and hearing loss is one of the primary risk factors. Chronic tinnitus significantly impacts the quality of life and mental health of these patients. Additionally, emerging research suggests a potential link between tinnitus perception and cognitive impairments, alongside difficulties in speech comprehension. In this talk, I will present data from a behavioral study in n=32 chronic tinnitus patients and n=32 control participants matched in age, sex and hearing loss. All participants underwent cognitive tasks covering general cognitive status, processing speed, cognitive flexibility, inhibition and working memory. In addition, we assessed speech-in-noise perception, listening effort, hearing handicap and hyperacusis. All tinnitus patients further filled in questionnaires targeting the history and distress of their tinnitus. We hypothesized that tinnitus patients exhibit deficits in cognitive abilities and speech-in-noise perception along with experiencing a higher listening effort. We further expected a negative correlation between tinnitus distress and cognitive abilities indicating higher distress with lower scores. Our preliminary data analysis (n=31 tinnitus patients and n=20 control participants) indicated significantly lower general cognitive abilities, worse speech-in-noise perception and slower processing speed. Further, better speech-in-noise perception seems to be related to higher general cognitive abilities, faster processing speed and better interference control. Hence, we demonstrate that the chronic tinnitus perception significantly impacts cognitive functions and speech-in-noise perception.

Use of OPM-MEG for Auditory Research (16:30 – 18:00)

Rodrigo Andrés Donoso-San Martín, *Tübingen Hearing Research Centre, Dept. of Otolaryngology Head and Neck Surgery, University of Tübingen, Germany; Laboratorio Neurobiologia de la Audicion, Departamento de Neurociencia, Facultad de Medicina, Universidad de Chile, Santiago, Chile*; **Stephan Wolpert**, *Tübingen Hearing Research Centre, Dept. of Otolaryngology Head and Neck Surgery, University of Tübingen, Germany*; **Stefan Fink**, *Tübingen Hearing Research Centre, Dept. of Otolaryngology Head and Neck Surgery, University of Tübingen, Germany*; **Paul H. Delano**, *Laboratorio Neurobiologia de la Audicion, Departamento de Neurociencia, Facultad de Medicina, Universidad de Chile, Santiago, Chile*; **Christoph Braun**, *MEG-Center, University of Tübingen, Germany*; **Lukas Ruttiger**, *Tübingen Hearing Research Centre, Dept. of Otolaryngology Head and Neck Surgery, University of Tübingen, Germany*; **Marlies Knipper**, *Tübingen Hearing Research Centre, Dept. of Otolaryngology Head and Neck Surgery, University of Tübingen, Germany*

Acquired auditory processing disorders including age dependent hearing loss, speech discrimination deficits, tinnitus or hyperacusis, require a personalized diagnosis to assign the individual cause within the auditory hierarchy to either the periphery, subcortical, or distinct cortical or cortico-fugal neuronal dysfunctions. The good functioning of the feedforward and feedback PV-IN network is an essential precondition for audition that above all senses relies on high-speed information flow (Zajac IT and Nettelbeck T, 2018). Therefore, we hypothesize disease-specific deficits in temporal intracortical network function in auditory circuits. We studied fast auditory processing in tinnitus subjects with or without the comorbidity of hyperacusis using auditory stimuli evoking time-sensitive cortical responses. These responses were recorded using a time-sensitive OPM-MEG. We expect this method to become an efficient diagnostic strategy to fathom peripheral or central contribution of the distinct auditory impairments in the future to improve individualized targeted interventional therapies. Here we will present preliminary results demonstrating the usability and function of the OPM-MEG for hearing research in a

clinical setting. Acknowledgment and funding: This work was supported by ERA-NET NEURON JTC 2020: BMBF 01EW2102 CoSySpeech and the Tübingen Research Take off Program (TRT) of the Brasilien-LateinamerikaZentrum, University of Tübingen.

Social Evening (19:00 – 23:59)

Saturday, 21.06.2025

Neural Dynamics of Threat Processing: Exploring Underlying Mechanisms and Their Relevance for Psychopathology (09:00 – 10:30)

Stegmann, Yannik

Understanding fundamental threat responses is crucial for improving therapeutic applications for various psychopathologies. Exploring their neural correlates offers a unique perspective on adaptive threat responses and their dysfunctions. This symposium examines fear learning, generalization, and extinction processes, highlighting their underlying neural mechanisms as well as the influence of contextual factors and psychopathologies. Specifically, Bierwirth et al. will present data on the neurophysiological correlates of prediction errors during the acquisition and extinction of fear memories. Stegmann et al. will address how aversive contexts impact visuocortical correlates of sustained attention during generalized threat, showing that competing attentional demands related to cue- and context-responses are segregated into different neural harmonics. Prantner et al. will explore the magnetoencephalographic correlates of a conditioning paradigm in patients with spider phobia compared to healthy controls, focusing on differential behavioral and neural processing in relation to the phobia relevance of the conditioned stimulus and fear generalization. Espino-Paya et al. will investigate the role of classical conditioning in tinnitus distress, demonstrating that tinnitus patients exhibit maladaptive aversive learning across both auditory and visual domains, along with evidence for an impaired auditory threat inhibition in prefrontal regions. Together, this symposium provides valuable insights into the neural mechanisms underlying defense behaviors and how they are influenced by contextual factors and individual differences. Additionally, it highlights the impact of dysfunctional threat processing on fear and anxiety, offering a deeper understanding of the mechanisms contributing to psychopathology and potential avenues for therapeutic intervention.

Fear Extinction Learning and The Reward Positivity (09:00 – 10:30)

Philipp Bierwirth, *Philipps-Universität Marburg, Germany*; **Marian Boor**, *Philipps-Universität Marburg, Germany*; **Erik M. Mueller**, *Philipps-Universität Marburg, Germany*

Recent evidence highlights the role of dopamine in fear extinction learning. More specifically, studies in rodents have shown that the unexpected omission of a threat during early extinction elicits a dopaminergic reward prediction error that drives fear extinction. Early human fMRI studies have also revealed a prominent role of prediction errors in dopamine-related brain regions during extinction learning. In the present study, we aimed to further elucidate the role of prediction errors in human fear extinction by leveraging the high temporal resolution of electroencephalography (EEG). We were primarily interested in the reward positivity (RewP) as a presumed proxy for dopaminergic prediction errors in humans. To this end, we used a differential fear conditioning paradigm involving three conditioned stimuli (CS). To systematically manipulate threat expectancy, one CS+ was paired with the unconditioned stimulus (US) in 66% of fear acquisition trials (CS+66%; high expectancy), another CS+ was paired in 33% of trials (CS+33%; low expectancy), and one CS was never paired with the US (CS0%; no expectancy). All CSs were subsequently subjected to extinction learning. EEG was recorded throughout both phases, and single-trial expectancy ratings were collected. As expected, preliminary analyses (n = 11/20) revealed strong prediction error signals at the behavioral level (i.e., expectancy ratings), particularly during early extinction learning. Importantly, this was accompanied by a significant enhancement of the RewP for both CS+ stimuli compared to the CS. The final results of this ongoing study will be presented.

The Impact of Aversive Contexts on Visuocortical Processing of Generalized Threat (09:00 – 10:30)

Yannik Stegmann, *University of Würzburg, Germany*; **Matthias Gamer**, *University of Würzburg, Germany*

Adapting behavior to environmental demands is a fundamental aspect of survival. In the face of unfamiliar potential dangers, organisms display a wide range of defensive mechanisms, such as using contextual information to prepare for upcoming threats and extrapolating from previous experiences with similar encounters (threat generalization). However, detecting an imminent threat cue within an aversive context presents competing attentional demands: on one hand, vigilance is required to monitor the environment, while on the other, attention must be selectively focused on the threatening stimulus once detected. How these mechanisms interact remains poorly understood. Therefore, the current study aimed to orthogonally combine threat generalization with contextual information and measure correlates of defensive behavior on a subjective, autonomic, and electrocortical level. Fifty-two human participants completed a threat generalization paradigm followed by a context phase in which the conditioned cues were presented against aversive or neutral contexts, respectively. Results revealed successful threat generalization for subjective and pupillary responses, with overall heightened responses for cues presented in aversive compared to neutral contexts. For visuocortical activity, as measured by steady-state visually evoked potentials (ssVEPs), this response pattern was separated into different frequencies. While the fundamental frequency showed the general main effect of aversive contexts, the second harmonic followed a generalization gradient, suggesting a segregation of competing attentional demands via neural harmonics. Together, these findings provide new insights into adaptive defensive behavior in complex situations, characterized by an additive model of different defensive processes.

Magnetoencephalographic Correlates of Fear Generalization Are Modulated by Phobia-relevance of the Unconditioned Stimulus in Spider Phobics (09:00 – 10:30)

Sabine Prantner, *Universität Osnabrück, Germany*; **Maimu Rehbein**, *Universität Osnabrück, Germany*; **Consortium SpiderVR**, *SpiderVR Consortium*; **Markus Junghöfer**, *Universität Münster, Germany*; **Kati Roesmann**, *Universität Osnabrück, Germany*

Specific phobias are among the most common anxiety disorders. As overgeneralization of fear is a pathogenic marker of anxiety disorders, we investigated its neurocognitive basis in patients with spider phobia and matched healthy controls. Using magnetoencephalography (MEG), we employed a differential conditioning paradigm utilizing phobia-relevant (images of a spider) and non-phobia-relevant (images of a screaming face) audiovisual unconditioned stimuli. Source reconstructions of event-related magnetic fields, as well as behavioral UCS-expectancy and fear ratings in response to CS+, CS-, and generalization stimuli (GS), were obtained. Behavioral results from a preliminary subsample (n = 50 persons per group) indicate equivalent discrimination performance for GS. However, patients rated all stimuli (CS+, GS1-7, CS-) within the phobia-relevant UCS-condition as more fear-evoking compared to healthy controls and the phobia-irrelevant UCS-condition. Additionally, there was some evidence for group-dependent generalization gradients; however, evidence regarding the influence of UCS-condition on this effect was inconclusive. Group-dependent generalization gradients were also found in parieto-occipital and fronto-temporal brain regions. Interestingly, influences of the UCS-condition on these gradients were revealed in similar regions. These preliminary results suggest that the effects of phobia-related unconditioned stimuli on fear generalization may be more pronounced at a neural level. A multimodal approach to studying the fear pathogenic mechanisms of generalization in specific phobias might be fruitful in future studies.

Magnetoencephalographic and Multimodal Correlates of Aversive Generalization Learning in Tinnitus (09:00 – 10:30)

Alejandro Espino-Payá, *Institute of Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*; **Riccardo**

Bianco, *Institute of Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*; **Cosima Lukas**, *Department of Otorhinolaryngology, Jena University Hospital, Friedrich-Schiller-University Jena, Germany*; **Christian Dobel**, *Department of Otorhinolaryngology, Jena University Hospital, Friedrich-Schiller-University Jena, Germany*; **Joachim Gross**, *Institute of Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*; **Markus Junghöfer**, *Institute of Biomagnetism and Biosignal Analysis, University of Münster, Germany; Otto Creutzfeldt Center for Cognitive and Behavioral Neuroscience, University of Münster, Germany*

Tinnitus-related distress can be explained through classical conditioning, where the tinnitus sound becomes linked to an aversive emotional state, reinforcing a distress-perception loop. However, no previous research has investigated whether maladaptive aversive learning in tinnitus patients extends beyond auditory stimuli to involve other sensory modalities. We hypothesized that tinnitus patients would show increased aversive and diminished safety learning and overgeneralization to aversive conditioned stimuli in both the tinnitus-related auditory and the tinnitus-unrelated visual domain. We also expected a dysfunctional prefrontal activation. Tinnitus patients and healthy controls underwent an auditory and visual conditioning paradigm. In the auditory domain, low- and high-frequency tones (CS+) were paired with an aversive sound (US), while the other served as a safety signal (CS-). In the visual domain, high- and low-spatial frequency gratings followed the same conditioning procedure. Generalization stimuli (GS) spanning both modalities were presented before and after conditioning while neural responses were recorded via magnetoencephalography (MEG), alongside subjective threat ratings. Both groups exhibited generalization effects in their threat ratings, but MEG data revealed tinnitus-specific alterations. While early sensory activations aligned with expected generalization gradients, prefrontal regions (vmPFC, dlPFC) showed typical inhibitory patterns in controls but reversed activation in tinnitus patients, indicating dysfunctional threat regulation. These findings suggest that tinnitus patients experience maladaptive aversive learning across modalities, with dysregulated prefrontal activity contributing to heightened distress, further advancing our understanding of tinnitus-related neurophysiological mechanisms.

Social Exclusion versus Prosocial Interaction: Neural, Physiological and Psychological Mechanisms (09:00 – 10:30)

Müller-Alcazar, Anett; Kuhl, Linn Kristina

Human social behavior is characterized by a dynamic interplay between inclusion and exclusion. While positive social interaction affects neural, endocrine and physiological synchrony, social rejection can further modify these processes, leading to distinct cognitive and emotional consequences and possibly clinical symptoms. Thus, understanding the mechanisms underlying these experiences is critical for advancing social neuroscience and preventing mental disorders. This symposium brings together cutting-edge research investigating the neural and physiological underpinnings of social exclusion and interaction by integrating findings from diverse experimental paradigms. Using diverse methods such as fMRI hyperscanning, physiological synchronization and sympathetic and endocrine analyses, these presentations provide new insights into how social connection and rejection influence brain function, autonomic and endocrine responses, and interpersonal dynamics in healthy and clinical samples.

Linn Kuehl will talk about the link between emotional abuse in childhood and rejection sensitivity in later life. Nele Reinsberg will present data from two replication studies looking at social exclusion, including the potential protective effect of smartphones. Katja Wingenfeld will then demonstrate findings on the effects of social exclusion in patients with borderline personality disorder. Julia Koch will uncover the neural bases of interpersonal social processes including the dynamics of aggression. In the final presentation, Nina Volkmer will present the effects of social exclusion on physiological synchrony in a conformity paradigm.

In the discussion, we will consider theoretical and methodological advances, implications for mental

health and social behavior, and future directions for interdisciplinary research on social exclusion and interaction.

Associations of Childhood Emotional Maltreatment, Rejection Sensitivity and Social Exclusion in Emerging Adults (09:00 – 10:30)

Linn Kristina Kuehl, *MSB Medical School Berlin, Berlin, Germany*; **Johanna Lass-Hennemann**, *Universität des Saarlandes, Saarbrucken, Germany*; **Michaela Pfundmair**, *Hochschule des Bundes für öffentliche Verwaltung, Berlin, Germany*; **Stefan Salzmann**, *HMU Health and Medical University Erfurt, Erfurt, Germany*; **Frank Euteneuer**, *Vinzenz Pallotti University, Vallendar, Germany*

Social inclusion and belonging is a basic human need, and social exclusion may be especially challenging to individuals with enhanced sensitivity to social rejection. Emotional maltreatment during childhood is considered as one predisposing factor for rejection sensitivity. In two studies, we tested the hypothesis that in particular emotional maltreatment (emotional abuse and neglect) compared to other maltreatment subtypes relate to rejection sensitivity in emerging adults. Rejection sensitivity was measured as a trait as well as a state in response to social exclusion in an experimental design. In study 1, 311 emerging adults (18-25 years) participated in a retrospective cross-sectional assessment. Here, we investigated whether intensities of childhood emotional abuse and neglect have unique associations with trait rejection sensitivity, when considering other maltreatment subtypes (emotional, sexual and physical abuse, emotional and physical neglect). In study 2, 78 emerging adults participated in an experiment (O-Cam paradigm) which included the experience of social exclusion. Here, we examined whether childhood emotional maltreatment moderated the response to social exclusion in terms of need depletion, sadness and anger (vs. inclusion). The results of study 1 indicate that emotional abuse and neglect have unique associations with rejection sensitivity. The results of study 2 shows significant effects for emotional abuse. We conclude that childhood emotional abuse may relate to rejection sensitivity expressed in enhanced responses to social exclusion in young adulthood. Enhanced rejection sensitivity may be considered as one mechanism how childhood emotional maltreatment predisposes individuals to interpersonal and mental health problems.

Social Exclusion in Young Adulthood: Implications for Pain Perception and Mobile Phone Usage - Findings from Two Conceptual Replication Studies (09:00 – 10:30)

Nele Reinsberg, *Department of Human Medicine, Faculty of Medicine, MSH Medical School Hamburg, Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg, Hamburg, Germany*; **Luna Elena Martinez Tödter**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Hamburg, Germany*; **Lena Bärenwald**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Hamburg, Germany*; **Barbara Rüttner Götzmann**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Hamburg, Germany; ICPP Institute for Clinical Psychology and Psychotherapy, MSH Medical School Hamburg, Hamburg, Germany.*; **Anett Müller-Alcazar**, *Department of Psychology, Faculty of Human Sciences, MSH Medical School Hamburg, Hamburg, Germany; ICAN Institute for Cognitive and Affective Neuroscience, MSH Medical School Hamburg, Hamburg, Germany*

Young adults have increasingly reported experiences of loneliness during the recent COVID-19 pandemic. Loneliness and social exclusion can have profound effects on mental and physical health and can be associated with depression, migraines or back pain. Neuroimaging results show that identical brain regions are activated during social exclusion and physical pain. Phones can act as a buffer, exerting a protective effect during social exclusion. Reliable and credible research is essential for the development of effective prevention and intervention strategies. Within this talk, results of two conceptual replication studies will be discussed. Both studies utilized experimental paradigms, albeit with distinct approaches, to induce social exclusion in young students in Germany. Study 1 aimed to replicate the research of Eisenberger et al. (2003) by using the Cyberball paradigm, a virtual ball tossing game, to investigate the relationship between social exclusion and pain. With data collection ongoing, questionnaire data from n = 35 participants were collected, heart rate (HR) and heart rate variability (HRV) assessment as

physiological indicators are in preparation. Study 2 sought to replicate the findings of Hunter et al. (2018), using the Yale Interpersonal Stressor, focusing on exploring the buffering effect of phones in N = 84 participants. In addition to subjective responses, HR and HRV were measured. Subjective and physiological data will be discussed. Preliminary data show that both paradigms successfully induced social exclusion. Both studies provide valuable insights into social exclusion of young adults and its implications on prevention efforts, which emphasizes the importance of replication studies.

Psychobiological Responses to Social Exclusion in Women with Borderline Personality Disorder (09:00 – 10:30)

Katja Wingenfeld, *Charité Universitätsmedizin, Germany*; **Livia Graumann**, *Charité Universitätsmedizin, Germany*; **Eugenia Kulakova**, *Charité Universitätsmedizin, Germany*

Compared to healthy individuals, patients with Borderline personality disorder (BPD) showed a blunted cortisol response and an enhanced reactivity of the autonomous nervous system after psychosocial stress induced with the Trier Social Stress Test (TSST). Additionally, they reported reduced emotional empathy, while healthy individuals typically react to stress with heightened empathy and prosocial behavior. We aimed to investigate whether social exclusion is involved in these alterations. This is plausible, as social exclusion is one of the most unpleasant components of the TSST, which individuals with BPD are especially sensitive to. We randomized women with BPD and healthy women to an exclusion or an overinclusion condition of the virtual ball game Cyberball. Cortisol, heart rate variability (HRV), and perceived stress were measured and participants underwent measurements of social cognition. Patients with BPD showed higher need threat in both Cyberball conditions (overinclusion and exclusion) compared to HC. This difference was more pronounced after exclusion. On a physiological level, no changes in cortisol were seen but vagal responses differed between patients and controls. Implications of the presented results will be discussed.

Conflict Dynamics in Social Interactions within Close Relationships: Insights from fMRI-Hyperscanning in a Sibling Sample (09:00 – 10:30)

Julia Koch, *University Hospital RWTH Aachen, Germany*; **Lucia Hernandez-Pena**, *University Hospital RWTH Aachen, Germany*; **Dorothea König**, *University Hospital RWTH Aachen, Germany*; **Julia Schräder**, *University Hospital RWTH Aachen, Germany*; **Edward S. Brodkin**, *University of Pennsylvania, Philadelphia, PA, USA*; **Ute Habel**, *University Hospital RWTH Aachen, Germany*; **Rik Sijben**, *University Hospital RWTH Aachen, Germany*; **Lisa Wagels**, *University Hospital RWTH Aachen, Germany*

Investigation of the neural bases of interpersonal social processes has been advanced by secondperson neuroscience approaches that employ dyadic hyperscanning. We will present data from a hyperscanning study that investigates aggression dynamics in a sibling sample performing various interaction tasks (including audio recording). Behavioral and neural responses were recorded simultaneously, allowing us to examine both within-subject dynamics and intra-dyad interactions. Our findings provide insight into the neural mechanisms underlying interpersonal conflict by linking patterns of aggression with specific neural activity across interacting individuals.

The Odd One Out - Is Difference of Opinion Reflected in Physiological Synchronisation? (09:00 – 10:30)

Nina Volkmer, *Neuropsychology, Department of Psychology, University of Konstanz, Germany; Center for the Advanced Study of Collective Behaviour, Konstanz, Germany*; **Jessica M. Wetzel**, *Neuropsychology, Department of Psychology, University of Konstanz, Germany*; **Stella Wienhold**, *Neuropsychology, Department of Psychology, University of Konstanz, Germany; Center for the Advanced Study of Collective Behaviour, Konstanz, Germany*; **Bernadette F. Denk**, *Neuropsychology, Department of Psychology, University of Konstanz,*

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Background: Social interactions have a profound impact on our health. While studies have shown how negative social situations (e.g., exclusion) manifest themselves on the intraindividual physiological level, the accompanying interpersonal dynamics are less well elucidated. Therefore, the current study investigates whether dissimilarity of opinion in a group affects physiological synchrony during a discussion task. Methods: We assessed N =50 participants (62% female) in a naturalistic conformity paradigm. Interested participants were initially screened regarding their opinions across a variety of socio-political topics (e.g., speed limit on highways). Eligible participants were then allocated into groups of 4-5 so that all but one member shared a similar opinion regarding a specific topic. At the beginning of the session, participants were asked to publicly position themselves on the topic in question, defend their position, and participate in a group discussion. Subsequently, participants position regarding the topic was once again voiced publicly. The entire session was accompanied by an electrocardiogram (ECG) recording. We used multilevel models to investigate effects of opinion difference (combined across all votings) on dyadic heart rate variability (HRV) synchrony (cross-wavelet power calculated from ECG data) within high frequency. Results: Preliminary results indicate that the relation between opinion difference and HRV synchrony is dependent on the specific frequency range. Interestingly, greater opinion difference is associated with increased HRV synchronization within the 0.125-0.25 frequency range, while no relation could be found within the 0.25-0.5 frequency range. Discussion: These results suggest distinct interpersonal dynamics on the physiological level at specific frequencies.

The Influence of Sex Hormones on Neural Structure, Psychological Functioning and Mental Health (09:00 – 10:30)

Deuter, Christian Eric; Kulakova, Eugenia

The influence of sex hormones on human behavior and psychological functioning has increasingly become the focus of scientific interest. Differences in various psychological domains are traced back to different hormonal profiles between the sexes. These hormones have an influence on developmental processes and have a formative effect on brain structure and function. Even before birth, sex hormones contribute significantly to the differentiation between the sexes. Sex hormones not only channel the developmental process, the acute levels and fluctuations in the release of these hormones have a significant effect on emotional and cognitive processes in adulthood. Of note, fluctuations in estradiol and progesterone levels play an important role in the pathogenesis of common mental disorders. Women are significantly more affected by anxiety and depression, yet this difference only occurs after puberty and gonadal maturation. Borderline personality disorder, also diagnosed more frequently in women, has been associated with increased basal testosterone. In this symposium, we will present current research findings from basic research and clinical practice. Yasaman Rafiee will present data on the moderating role of sex and gender role self-concepts on sex hormones and cortisol reactivity to social stress, Christian Deuter about effects of estradiol and progesterone administration on fear extinction in healthy women, Eugenia Kulakova about the role of testosterone in women with borderline personality disorder, Serenay Sarkaya about effects of antiestrogen therapy on brain structure, mood, and well-being in women with breast cancer and Kim Hoffmann about the relationship between menstrual cycle, stress and cortisol in women with PMDD.

Sex Hormones and Cortisol Reactivity to Social Stress (09:00 – 10:30)

Stephanie Zintel, *Institute of Psychology, Department of Gender Studies and Health Psychology, Heidelberg University; Center for Preventive Medicine and Digital Health, Medical Faculty Mannheim, University Heidelberg*; **Laura Schmidt**, *Institute of Psychology, Department of Gender Studies and Health Psychology, Heidelberg University*; **Andreas Neubauer**, *Institute of Psychology, RWTH Aachen University*; **Martin Stoffel**, *Institute of Medical Psychology, Center for Psychosocial Medicine, Heidelberg University Hospital, Heidelberg University*; **Yasaman Rafiee**, *Institute of Medical Psychology, Center for Psychosocial Medicine, Heidelberg University Hospital, Heidelberg University*; **Beate Ditzen**, *Institute of Medical Psychology, Center for Psychosocial Medicine, Heidelberg University Hospital, Heidelberg University; German Center for Mental Health (DZPG, partner site Heidelberg/Mannheim/Ulm, Heidelberg, Germany*; **Monika Sieverding**, *Institute of Psychology, Department of Gender Studies and Health Psychology, Heidelberg University*

The stress response is a regulatory process involving both psychological and biological mechanisms. Previous research has demonstrated sex differences in salivary cortisol levels following the Trier Social Stress Test (TSST), potentially influenced by sex hormone levels, though this relationship remains understudied. This exploratory analysis is part of a larger study currently under publication. Here, we aimed to investigate the association between sex hormones (estradiol and testosterone) and cortisol reactivity to the TSST in a sample of 175 healthy individuals (98 females). Additionally, we examined whether gender role self-concepts, specifically agency and communion, moderated the relationship between sex hormones and cortisol reactivity, assessing the extent to which observed sex differences align with stereotypical gender roles. Participants underwent the TSST, and saliva samples were collected at five time points via passive drooling. Cortisol levels were measured at all five time points, while estradiol and testosterone were assessed at T1 and T5. We found no significant association between estradiol or testosterone (measured at T1) and cortisol levels (log-transformed). Additionally, a weak interaction effect between estradiol and communion on cortisol levels was observed, indicating that higher estradiol levels were associated with lower cortisol levels in individuals with a high communion. This suggests that the relationship between estradiol and cortisol might be influenced by individuals' gender role self-concept. Although exploratory, these findings provide a basis for future research examining the interplay between sex hormones, gender roles, and cortisol reactivity to social stress.

Effects of Estradiol and Progesterone Administration on Fear Conditioning and Extinction (09:00 – 10:30)

Christian Eric Deuter, *Charité Universitätsmedizin Berlin, Germany*; **Michael Kaczmarczyk**, *Charité Universitätsmedizin Berlin, Germany*; **Katja Wingenfeld**, *Charité Universitätsmedizin Berlin, Germany*; **Christian Otte**, *Charité Universitätsmedizin Berlin, Germany*

Fear conditioning and extinction learning are discussed as important etiologic features in anxiety disorders. The risk of anxiety disorders is increased in women, and fear conditioning has been shown to be influenced by the phase of the menstrual cycle and circulating sex hormones. The aim of our study was to investigate the effects of separate and combined administration of estradiol and progesterone on fear extinction in healthy women. We investigated these relationships in a placebo-controlled, randomized trial of 116 healthy women (mean age 25.7 6.0 years) who completed a fear conditioning paradigm, with acquisition (fear learning), extinction and retrieval on three consecutive days. Skin conductance responses (SCR) served as the main outcome variable. Two hours before testing on day 2, participants received estradiol, progesterone, a combination of both or placebo. During acquisition, participants responded stronger to CS+ compared to CS- across groups, indicating successful fear learning. In the subsequent extinction phase, estradiol administration produced a lack of differentiation between the CS. At retrieval on day 3, the estradiol groups showed stronger SCR to the previously extinguished CS- while progesterone had no effect. We conclude that exogenous estradiol administration influenced the extinction of the conditioned fear response, which subsequently led to a stronger return of fear.

The Role of Testosterone in Females with Borderline Personality Disorder (09:00 – 10:30)

Eugenia Kulakova, *Charité Universitätsmedizin Berlin, Germany*; **Livia Graumann**, *Charité Universitätsmedizin Berlin, Germany*; **Christian Eric Deuter**, *Charité Universitätsmedizin Berlin, Germany*; **Oliver T. Wolf**, *Charité Universitätsmedizin Berlin, Germany*; **Katja Wingenfeld**, *Charité Universitätsmedizin Berlin, Germany*

Theoretical Background: Elevated baseline levels of the sex hormone testosterone have repeatedly been observed in biologically female patients with Borderline Personality Disorder (BPD). Furthermore, the increased prevalence of polycystic ovary syndrome in this population suggests a hyperandrogenic phenotype. The possible causes and consequences of higher testosterone levels in this population remain underexplored. Research Question: It remains an open question whether testosterone levels are related to specific psychiatric symptoms in females with BPD. Based on the assumption that testosterone promotes aggressive, dominant, and status-seeking behaviour, we investigated whether elevated testosterone levels in females with BPD were associated with externalizing (aggressive or impulsive) symptoms. Method: Baseline testosterone levels in saliva were measured in a sample of 98 patients with BPD. The relationship between testosterone levels and the severity of self-reported depressive and BPD symptoms was examined using the Borderline Symptom List (BSL-23) and the Beck Depression Inventory (BDI-II). Results: Positive associations were found between testosterone levels and the overall severity of psychiatric symptoms. Further analysis of individual questionnaire items revealed that testosterone was particularly associated with heightened feelings of self-dislike, senselessness, pessimism, and the feeling of being a failure. Conclusion: Our analyses confirm that baseline testosterone concentration is a relevant correlate of BPD symptomatology. However, elevated testosterone levels were linked to internalising and depressive symptoms rather than externalising ones. Possible explanations for the observed association and their implications are discussed.

Effects of Antiestrogen Therapy on Brain Structure and Mental Health in Women with Breast Cancer (09:00 – 10:30)

Serenay Yazici Sarikaya, *Tübingen University, Germany*; **Ann-Christin Kimmig**, *Tübingen University, Germany*; **Shona Ramroth**, *Tübingen University, Germany*; **Uta Hoopmann**, *Tübingen University, Germany*; **Markus Hahn**, *Tübingen University, Germany*; **Sara Brucker**, *Tübingen University, Germany*; **Anna Wikman**, *Tübingen University, Germany*; **Birgit Derntl**, *Tübingen University, Germany*

Breast cancer is the most common cancer in women worldwide. While lifesaving, treatment can significantly affect physical health, mood, and brain architecture. Antiestrogen therapy is a type of breast cancer treatment that inhibits estrogen production and its effects. Given the role of estrogen in brain structure and mental health, we hypothesize that its reduction will negatively affect both mood and brain structure. Specifically, we expect that, compared to baseline, women with breast cancer will show decreased gray and white matter volume in the amygdala and hippocampus, along with increased negative mood and anxiety three weeks after starting antiestrogen therapy. Women with breast cancer were recruited from the University Women's Hospital in Tübingen, Germany, and underwent MRI scans on a 3T PRISMA scanner. In addition to MRI scans, participants completed several questionnaires assessing mood, depression, and state anxiety. Neuroimaging data were preprocessed using SPM-CAT12, with the Neuromorphometrics Atlas used for regional brain volume analysis. Statistical analyses were performed using SPSS and R. Preliminary results from 12 women with breast cancer showed a trend toward decreased right amygdala and left hippocampal volume. Additionally, a trend indicated an increase in negative affective states, depression, and anxiety at the second time point. While the findings suggest possible effects of antiestrogen therapy on brain structure and mental health, the limited sample size (n=12)

may account for the lack of statistical significance. Recruitment is ongoing, and additional data will be presented to provide a more comprehensive analysis.

Cortisol Awakening Response in Premenstrual Dysphoric Disorder and Health Across the Menstrual Cycle (09:00 – 10:30)

Kim Hoffmann, *Humboldt-Universität zu Berlin, Berlin School of Mind and Brain, Berlin, Germany; Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Clinic for Cognitive Neurology, University Medical Center Leipzig, Leipzig, Germany; Leipzig Center for Female Health & Gender Medicine, Medical Faculty, University Clinic Leipzig, Leipzig, Germany*; **Rachel G Zsido**, *Leipzig Center for Female Health & Gender Medicine, Medical Faculty, University Clinic Leipzig, Leipzig, Germany; Department of Psychiatry, Clinical Neuroscience Laboratory for Sex Differences in the Brain, Massachusetts General Hospital, Harvard Medical School, USA*; **Arno Villringer**, *Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Clinic for Cognitive Neurology, University Medical Center Leipzig, Leipzig, Germany; Max Planck School of Cognition, Leipzig, Germany*; **Swen Hesse**, *Department of Nuclear Medicine, University of Leipzig, Leipzig, Germany*; **Osama Sabri**, *Department of Nuclear Medicine, University of Leipzig, Leipzig, Germany*; **Veronika Engert**, *Institute of Psychosocial Medicine, Psychotherapy and Psychooncology, Jena University Hospital, Friedrich-Schiller University, Jena, Germany*; **Julia Sacher**, *Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Clinic for Cognitive Neurology, University Medical Center Leipzig, Leipzig, Germany; Leipzig Center for Female Health & Gender Medicine, Medical Faculty, University Clinic Leipzig, Leipzig, Germany; Max Planck School of Cognition, Leipzig, Germany*

Introduction: Studies suggest there are alterations in the cortisol awakening response (CAR) in patients with premenstrual dysphoric disorder (PMDD), as exemplified by delayed cortisol peaks and flatter diurnal cortisol slopes compared to healthy controls. While inconsistent, previous research associates CAR alterations with prefrontal serotonin transporter (5-HTT) binding and severity of depressive symptoms. The CAR in relation to 5-HTT binding and depressive symptoms in patients with PMDD across the menstrual cycle has not been investigated yet. Methods: 30 females with PMDD and 29 healthy controls self-collected three saliva samples (awakening, +30min, +60min) to assess the CAR and five more samples (9am, 12pm, 3pm, 6pm, 9pm) to assess the diurnal cortisol slope once during the periovulatory and once during the premenstrual phase. [^{11}C]DASB positron emission tomography scans were performed to measure 5-HTT non-displaceable binding potential (BP_{ND}). Depressive symptoms were assessed using the Hamilton Depression Rating Scale (HAM-D). Results: A significant interaction between group and cycle phase was found on cortisol peak (beta = 0.78, p = 0.05, d = 0.62, 95% CI = [0.01;1.56], corrected for awakening cortisol: beta = 0.89, p = 0.03, d = 0.76, 95% CI = [0.13;1.64]). During the premenstrual phase, cortisol peak concentration correlated negatively with midbrain 5-HTT BP_{ND} (r = -0.35, p < 0.01, R^2 = 0.12) and HAM-D scores (r = -0.30, p = 0.02, R^2 = -0.09). Conclusion: Patients with PMDD demonstrated attenuated cortisol peaks compared to healthy controls, with underlying associations to the serotonergic system and the severity of depressive symptoms.

Cardiac and Respiratory Effects on the Brain, Perception and Behavior (09:00 – 10:30)

Larra, Mauro

Peripheral bodily processes are conveyed to the brain via several mechanisms promoting psychological and behavioral adaptations. There is now a solid body of evidence indicating that both cardiac and respiratory activity influence central-nervous processes mediating perception and behavior. This symposium will cover recent research into such peripheral modulation of central-nervous processes from basic reflexes to higher order cognition and action control. André Schulz (Luxemburg) will present a series of studies demonstrating cardiac modulation of the startle reflex and how it may be employed to assess the integrity of cardioafferent traffic. Leon von Haugwitz (Dortmund) will present behavioral and EEG studies revealing that cardiac activity modulates different aspects of sensorimotor control relevant to conflict processing. Diving deeper into the

neural correlates of motor control, Maria Herrojo-Ruiz (London) will provide evidence indicating that EEG alpha and beta suppression during motor imagery is influenced by the cardiac cycle. Cardiorespiratory activity may not only affect sensorimotor processes, but could also influence feelings of control that are associated with voluntary actions and their outcomes. Marta Gerosa (Berlin/Leipzig) will show how the coupling between cardiorespiratory rhythms and voluntary actions modulates this Sense of Agency. Beyond such acute effects, cardiorespiratory signals may even facilitate long-term behavioral adaptations. Miriam Nokia (Jyvaskyla) will demonstrate how learning processes and their electrophysiological correlates are modulated along cardiac and respiratory cycles in studies employing eyeblink-conditioning with young and elderly samples. Together, these contributions illustrate how cardiorespiratory signals influence brain activity to change the way we perceive and interact with our environment.

Visceral Modulation of Startle - A Pre-Attentive Method to Assess Visceral-Afferent Signals (09:00 – 10:30)

André Schulz, *University of Luxembourg, Luxembourg*

Afferent signals from different visceral organs are integrated in behavior, cognition and emotion. There is no non-invasive method to directly assess visceral-afferent signals. Startle eye blink responsiveness, mediated by brainstem reflexes, can be modulated by cognitive processes. This study set demonstrates that startle eye blink responses can also be used as a method for an indirect assessment of visceral-afferent signals. First, startle responses to acoustic noise bursts were lower when presented in the early (R-wave +230 ms) than in the late cardiac cycle phase (R +530 ms), an effect that could only be observed in healthy individuals, but not in those with diabetic autonomic neuropathy. This effect is also reflected in self-reported intensity of, and electrocortical responses to startle stimuli. Hence, this effect relies on intact baro-afferent signal transmission. Second, the perturbation of afferent cardiac signals by acute stress changes the pattern of this so-called cardiac modulation of startle (CMS), whereas exogenous cortisol administration had no effect. Therefore, the cardiodynamic changes associated with the autonomic stress response may be reflected in the CMS pattern. Third, stress-associated mental disorders, such as depersonalization disorder, showed altered CMS patterns, suggesting a dysfunctional processing of visceral-afferent signals in these samples. Finally, also respiratory phases and water ingestion elicited changes in startle eye blink responses, implying that afferent signals from the respiratory and gastrointestinal system may be assessed via this method, as well. In summary, visceral modulation of startle can be used to assess visceral-afferent signal transmission from different organs in health, stress, and disease.

Cardiac Cycle Effects on Conflict Processing and Their Neural Correlates. (09:00 – 10:30)

Leon Von Haugwitz, *Leibniz Institute - IfADo, Dortmund, Germany*; **Edmund Wascher**, *Leibniz Institute - IfADo, Dortmund, Germany*; **Mauro Larra**, *Leibniz Institute - IfADo, Dortmund, Germany*

Cardiac activity influences central-nervous processes modulating both perception and action. In two studies, we examined how cardioafferent traffic influences conflict processing, a mechanism responsible for resolving interference between automated and goal-directed responses. To explore modulatory pathways of these effects, participants underwent repeated Cold Pressor Tests (CPT) increasing stress-related cardiovascular load. In the first study, we found conflict-specific cardioafferent effects by contrasting sensorimotor and cognitive conflicts using an adapted Simon task. Accuracy improved for compatible but decreased for incompatible trials during systole versus diastole specifically for sensorimotor conflicts, indicating facilitated automated responses during systole. In our second study, we examined attentional conflicts by means of a change detection task where participants had to detect lateral luminance changes occasionally paired with more salient contralateral orientation changes. We found that for conflicts, systole trials showed increased errors but decreased misses, again pointing to more automated response tendencies. For unilateral luminance changes, systole trials showed

more misses, accompanied by frontal alpha/beta lateralization indicating attentional contributions to these effects. Moreover, this effect depended on cardiovascular reaction patterns during the CPT. Overall, our findings point towards a facilitation of automated responses induced by the visual context of a stimulus during systole. However, there was no effect of cardioafferent traffic on the frontocentral N2 indicating that the behavioral effects are not driven by altered conflict processing. Rather, cardioafferent traffic seems to alter behavior under conflict via sensorimotor and attentional mechanisms, an influence that is sensitive to the cardiovascular effects of acute stress.

Cardiac Cycle Effects on Neural and Behavioural Markers of Motor Imagery and Volitional Control (09:00 – 10:30)

Maria Herrojo Ruiz, *Goldsmiths University of London, United Kingdom*

Despite growing evidence that cardiac afferent signalling modulates perception, cognition, and action, its translational potential - particularly for assistive technologies such as brain-computer interfaces (BCIs)remains underexplored. In this talk, I present findings from two EEG studies examining how cardiac cycle phase influences motor processes relevant to BCI applications: motor imagery (MI) and motor preparation. In the first study, we assessed alpha (812 Hz) and beta (1330 Hz) suppression during MI and motor execution of thumb abductions, time-locked to systole or diastole. Imagined, but not executed, movements cued during diastole elicited significantly greater contralateral alpha and beta suppression, suggesting enhanced sensorimotor engagement to cues presented during phases of putatively low baroreceptor activity. EMG data showed increased muscle activation during diastole for both real and imagined movements, supporting a facilitatory effect of this cardiac phase. These results identify cardiac cycle-sensitive windows that may enhance MI-based BCIs. The second study investigated cardiac modulation of volition in Libet's task. We found that self-initiated movements in the W-condition - requiring participants to report the urge to move - clustered in diastole. Modulation of heart-evoked potentials did not explain the results, suggesting these timing effects are not driven by neural responses to heartbeats. We interpret this as evidence that cardiac input shapes motor preparation and contributes to the subjective experience of volition. Together, these studies show that diastole facilitates both motor imagery and the timing of the urge to move, advancing our understanding of how visceral signals shape sensorimotor control and inform BCI development.

Inner Rhythms of the Bodily Self: How Cardiorespiratory Signals Shape Voluntary Action Initiation and Sense of Agency (09:00 – 10:30)

Marta Gerosa, *Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Berlin School of Mind and Brain, Faculty of Philosophy, Humboldt-Universität zu Berlin, Berlin, Germany*; **Patrick Haggard**, *Institute of Cognitive Neuroscience, University College London, London, UK*; **Arno Villringer**, *Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Berlin School of Mind and Brain, Faculty of Philosophy, Humboldt-Universität zu Berlin, Berlin, Germany*; **Michael Gaebler**, *Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany; Berlin School of Mind and Brain, Faculty of Philosophy, Humboldt-Universität zu Berlin, Berlin, Germany*

Sense of agency (SoA), the experience of controlling voluntary actions and their outcomes, is traditionally attributed to sensorimotor predictive processes. Recent frameworks propose that inner bodily signals, like cardiac and respiratory rhythms, contribute to action generation and self-attribution, with SoA emerging from integrated interoceptive-sensorimotor processes. Despite voluntary action initiation preferentially aligning with specific cardio-respiratory phases, the functional role of such cardio-respiratory phase biases in modulating SoA remains unclear. In this preregistered study (osf.io/z7g9h), forty-four healthy adults (28.77.24 years; 23F) completed an intentional binding task alongside continuous cardiac and respiratory recordings. Action and tone binding measures were computed to conduct circular and binary analyses of cardio-

respiratory activity. All analysis scripts will be shared as reproducible, open-access pipelines, developed through a collaborative initiative (Brain-Body Analysis Special Interest Group). Behavioral results replicated classical intentional binding effects: voluntary actions were perceived later (32.8763.54 ms) and tones earlier (-88.1878.80 ms) when occurring in combination, compared to alone. Cardiac analysis showed a trend toward initiating keypresses early in the cardiac systole, with participants proportionally favoring systole over diastole for action generation. In binary analysis, cardiac phase at action or tone onset did not directly modulate action or tone binding, respectively. However, exploratory analysis showed that the more tones occurred during systole - a phase of high interoceptive noise - the weaker tone binding became. While replicating cardiac phase biases in voluntary action initiation, these biases did not influence the subjective experience of agency. Ongoing respiratory analyses will further elucidate how inner bodily rhythms contribute to SoA.

Optimizing Learning - Synchrony of the Brain and Body as a Tool? (09:00 – 10:30)

Miriam Nokia, *Department of Psychology, University of Jyvaskyla, Finland*

We have been studying how the phases of respiration and the cardiac cycle affect brain responses and learning about external stimuli. Our findings indicate that hippocampus-dependent associative motor learning, specifically the classical conditioning of the eyeblink response, is enhanced in individuals who receive the conditioned stimulus consistently at diastole during expiration, compared to those trained at systole during inspiration. This effect is observed in both young and elderly adults. In conclusion, the state of the body and brain fluctuates at various frequencies, and these oscillations gate information processing. However, there is significant variation between individuals in how the body and brain connect and how this affects cognition. In the future, we are interested in researching the utility of personalized approaches in optimizing learning.

Beyond Outcome Coding: The Relationship between Feedback Processing and Contextual Factors Before, During or After the Receipt of Feedback (09:00 – 10:30)

Bellebaum, Christian; Albrecht, Christine

The neurophysiological processes related to reward and feedback processing have been extensively investigated for more than 30 years now. It has been shown that dopaminergic neurons encode a reward prediction error. In humans, feedback processing is reflected in a cascade of event-related potential (ERP) components. The frontocentral feedback-related negativity (FRN) is presumably generated by computations of the so-called reward system, specifically prediction error signals in midbrain structures and the frontal cortex, while other ERP components may reflect feedback processing outside of the reward system. In this symposium, we seek to integrate recent advances in feedback processing research to better understand how cognitive and affective contextual manipulations influence feedback processing and utilization. Hans Kirschner will describe neuro-computational mechanisms responsible for the counter-normative influence of task-irrelevant variability in reward magnitude and feedback salience on probabilistic learning. Maren Giersiepen will talk about how the sense of agency affects neural correlates of feedback processing within and beyond the reward system. Franz Wurm will discuss research investigating how prediction errors and their neurophysiological representation affect happiness. Christine Albrecht will present how the event associated with feedback can lead to a recruitment of alternative neural mechanisms during feedback processing as reflected in the N170 ERP component. Finally, Constanze Weber will show how feedback timing affects neurophysiological representations of prediction errors for both presented and omitted feedback. Taken together, this symposium will contribute to a better understanding of the factors that influence feedback processing and its downstream effects.

Task-irrelevant Variability in Reward Magnitude and Feedback Salience Bias Reinforcement Learning (09:00 – 10:30)

Hans Kirschner, *OvGU Magbdeburg, Germany*; **Matthew Nassar**, *Brown University*; **Markus Ullsperger**, *OvGU Magbdeburg, Germany*

Optimal decision-making requires organisms to adaptively adjust their sensitivity to new information. While numerous studies demonstrate that humans can adaptively weight task-relevant information based on the stochasticity and volatility of the environment, less is known about the influence of task-irrelevant factors on choice behavior. Here, we used computational modeling and EEG - as a brain measure with high temporal resolution - to better understand mechanisms responsible for the influence of task-irrelevant variability in reward magnitude and feedback salience on probabilistic learning. Specifically, we investigated learning behavior in a variant of a probabilistic reversal learning task with different levels of noise, that introduced two types of task-irrelevant events: pay-out magnitudes were varied randomly and, occasionally, feedback presentation was enhanced by visual surprise. We found that participants learning performance was biased by distinct effects of these task-irrelevant factors. On the computational level, we show that both factors modulated trial-by-trial learning rate dynamics. In the EEG, these learning rate dynamics were reflected in a feedback-locked centroparietal positivity that also predicted behavioral adaptations. These results were replicated in an independent sample using a version of the task with reduced levels of noise. Interestingly, higher sensitivity to task-irrelevant factors was only negatively related to overall task performance in the task with high level of noise. Collectively, these data help to clarify the impact of task-irrelevant factors on probabilistic learning and suggest that these factors have a counter-normative influence on trial-by-trial learning rate dynamics.

Decisions That Count: Self-Determination, Not Instrumental Relevance of Outcomes Enhances Affective Processing During Goal-Directed Action (09:00 – 10:30)

Maren Giersiepen, *Ludwig-Maximilians-University*; **Simone Schütz-Bosbach**, *Ludwig-Maximilians-University*; **Jakob Kaiser**, *Nuremberg Institute for Market Decisions*

Freedom of choice enhances the sense of agency over our actions and their effects, which has been suggested to facilitate learning. Yet, how agency experience influences feedback processing during goal-directed behavior is not clearly understood. We performed two EEG studies to examine how freedom of choice influences feedback processing during reinforcement learning. Participants performed self- (free-choice) or externally determined (forced-choice) binary item choices, followed by monetary gains or losses. Study 1 (N = 30) revealed augmented midfrontal theta power for losses compared to gains, suggesting an increase in cognitive control when processing negative outcomes. Importantly, theta power was heightened for free compared to forced choices, irrespective of feedback valence, indicating enhanced outcome monitoring for self-determined actions. Study 2 (N = 37) demonstrated that free choices also increase feedback-related ERPs, indicating wide-ranging effects of choice on outcome processing. Free compared to forced choices elicited a larger N100, reflecting intensified sensory feedback processing. Furthermore, only free choices elicited a Reward Positivity, suggesting a selective coding of outcome value for self-determined actions. Crucially, these effects emerged despite comparable learning between free and forced choices and irrespective of whether forced-choice outcomes were relevant for participants future actions. This suggests that outcome processing is driven by the association with self-determined choice rather than the relevance of outcomes for future actions. Our findings highlight the pivotal role of self-determination in tracking the consequences of our actions and advance our understanding of the cognitive processes underlying the choice-induced facilitation in outcome monitoring.

How are you Doing? The Influence of Reward Processing and Neural Activity on Momentary Subjective Well-being (09:00 – 10:30)

Franz Wurm, *Leiden University, Netherlands, The; Leiden Institute for Brain and Cognition, Leiden University, Leiden, Netherlands, The*; **Daniela M. Pfabigan**, *Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway*; **Katharina Paul**, *Faculty of Psychology and Human Movement Science, University of Hamburg, Hamburg, Germany*

Feelings of happiness are thought to be driven by how well things are going. Interestingly, previous research suggests that momentary fluctuations in subjective well-being are also driven by outcome expectations and predictions errors i.e., the difference between expected and received outcomes. Besides the replication of these behavioral observations, the aim of the current study is to complement earlier fMRI findings and investigate the role of well-known feedback-processing ERPs in subjective well-being. To this end, 65 participants performed a gambling task and a simple bandit task. In both tasks they make choices to receive outcomes and report on their momentary happiness across trials. Using computational modelling, we confirm that both outcomes and prediction errors drive happiness across tasks. We show that the reward positivity (RewP) and P300 components are modulated by current happiness and predict future happiness. The preliminary findings of our pre-registered study demonstrate a clear connection between rewards, happiness and neural activity. Future analyses will focus on causal relations, testing if ERPs act as mediators between outcome (expectations) and happiness, and the role of learning in this process. Linking affective, cognitive and neural processing of rewards, this research could have profound implications for our understanding of the genesis and maintenance of mood disorders and related psychiatric symptoms.

What Is Learned Shapes How It's Learned: Effects of the Type of the Associated Event on Feedback Processing in the FRN/RewP and N170 ERP Components (09:00 – 10:30)

Christine Albrecht, *Heinrich-Heine-Universität Düsseldorf, Germany*; **Madita Röhlinger**, *Heinrich-Heine-Universität Düsseldorf, Germany*; **Marta Ghio**, *Heinrich-Heine-Universität Düsseldorf, Germany*; **Christian Bellebaum**, *Heinrich-Heine-Universität Düsseldorf, Germany*

Feedback learning probably engages two learning systems: the striatal reward system, as reflected in the FRN/RewP ERP component, and the medial temporal lobe (MTL). Recent research suggests that MTL activity during feedback learning may be reflected in the N170 ERP component, traditionally associated with higher-order visual processing in the fusiform gyrus. In terms of credit assignment, the MTL might play a role in reactivating a relevant event at feedback presentation, linking event and feedback, particularly when feedback is delayed. We hypothesized that the N170 reflects reactivation of visual stimuli at feedback presentation, assuming it to be most strongly involved in learning associations between visual stimuli and feedback. In contrast, due to its role in motor learning, the striatum, reflected in the FRN/RewP, may be more adept at forming action-feedback associations. In three studies, we examined whether (immediate or delayed) feedback processing depends on the type of association being learned, by manipulating the type of the associated event (actions vs. visual stimuli and visual vs. auditory stimuli) or the individuals belief about what the feedback relates to. The results demonstrated that both FRN/RewP and N170 components are influenced by the type of learned association, although the data suggest that the striatal and MTL systems also cooperate. In particular, we found first evidence that the N170 reflects the reactivation of specifically visual material during feedback presentation. Additionally, the N170 was consistently modulated by prediction errors across all studies, which further suggests that the MTL and/or fusiform gyrus contribute to feedback learning.

Effects of Feedback Timing on the Processing of Rewards, Losses and Their Omission (09:00 – 10:30)

Constanze Weber, *Heinrich Heine Universität Düsseldorf, Germany*; **Christian Bellebaum**, *Heinrich Heine Universität Düsseldorf, Germany*

Patient and fMRI studies suggest that the timing of performance feedback crucially determines where in the brain feedback is processed. While immediately delivered feedback relies on the striatum, delayed feedback appears to depend on hippocampal involvement. Challenging this distinction, we showed that computationally modeled prediction errors (PEs) are similarly encoded in neurophysiological responses (RewP and P300) to both immediate and delayed delivered rewardsbut not losses. Building on the seminal observation of a dip in dopaminergic firing when expected rewards are omitted and on the assumption that omission-related ERPs can reveal correlates of the PE, we hypothesized that the omission of rewards and losses might have distinct neural representations. To investigate this, we examined EEG responses to the reception and omission of rewards and losses, which served as feedback during a learning task. Crucially, omissions conveyed either the omission of a reward or a loss depending on learning context. To examine differences in omission-related responses with feedback timing, participants completed the task with either immediate or delayed (omitted) feedback. Analyses of frontocentral and centroparietal omission-related responses indicate PE effects on both reward and loss omissions for immediate feedback. However, centroparietal effects of reward omissions were more tightly linked to the time at which a reward could have been delivered. For delayed feedback, only responses to reward (but not loss) omissions showed an encoding by PEs, especially centroparietal. While these findings also uncover differences evoked by feedback timing, they again emphasize striking similarities, e.g. with regard to their sensitivity to rewards.

Coffee Break (10:30 – 10:45)

Awards Session (10:45 – 12:00)

Several awards are announced in this session. Join us in congratulating the award winners!

Research Prize of the Biological Psychology and Neuropsychology Division of the DGPs
Early Career Award of the Society for Psychophysiology and its Application (DGPA)
Brain Products Young Scientist Award
Presentation of the scholarship holders of the Lienert Stiftung
IGOR Prize for Open and Reproducible Research (Interest Group for Open and Reproducible Research, IGOR)
Science Communication Awards

Keynote Lecture 3: Andreas Keil: Adaptive Vision: How Experience Shapes the Way We Perceive the World (12:15 – 13:15)

It is now well established that sensation and perception are malleable processes, highly affected by biological and behavioral factors. These factors include an observers' goals, needs, and memories. This presentation gives an overview of research in this field. First, we present examples of conceptual and computational frameworks that link changes in visual perception to changes in the environment, focusing on contingencies between visual cues and aversive outcomes. We then discuss how human observers learn to prioritize visual cues that predict threat and danger over other competing cues, and how these acquired biases can be un-learned through extinction training. Visual biases to threat, well established

in animal and human work, have strong clinical and translational relevance, because excessive attention to threat has been identified as an etiological factor and a potential treatment target in fear, anxiety, depression, as well as in post-traumatic stress. The presentation will conclude by addressing some of these translational issues, discussing inter-individual differences in threat perception in the context of a neurocomputational model of threat bias formation, generalization, and extinction.

Conference Closing (13:15 – 13:20)