

YOUNG RESEARCHER TALKS

Session	Speaker
Session 1 15:00 – 16:15	Annika Wienke Adriana Olaya-Torres Anil Karabulut Timotej Glavac
30 min Coffee BREAK	
Session 2 16:45 – 18:00	Marcos Domic-Siede Eileen Lashani Vinzenn Kaspar Schmid Mathilde Gallistl

1. Annika Wienke (Universität Bremen, Germany)

Socioeconomic inequalities affect brain responses of infants

Developmental changes in functional neural networks are sensitive to environmental influences. This EEG study from the Bremen Initiative to Foster Early Childhood Development (BRIFE) examined how family background influences infants' neural responses to auditory stimuli. A total of 255 infants (6–14 months) participated in a passive auditory oddball paradigm (200 standards, 48 deviants). Additionally, resting-state EEG data was collected to extract the individual alpha frequency (IAF) for the sample. Socioeconomic status (SES) was assessed via parental education and migration background. Results revealed an immature N2-P3a complex. The N2 was diminished for deviant processing in infants from families with both low parental education and migration background, suggesting a cumulative impact of SES factors. These group differences were also reflected in event-related potentials (ERP) in infants from families with both low parental education and migration background, suggesting a cumulative impact of SES factors. These group differences were also reflected in event-related spectral perturbation (ERSP) and inter-trial coherence (ITC) around the infants' IAF of 5.3 Hz for the N2 time-window of deviant processing. Increased developmental risks may delay the emergence of faster spontaneous oscillations that the infant N2 emerges concurrently with. Our results may be an indication that the N2 component is immature in infancy and sensitive to environmental influences. Together, these findings highlight that early differences in the neural response to deviating stimuli—reflected in both ERP and oscillatory dynamics—are shaped by the intersection of environmental stressors and neurodevelopment stages. These neural markers may serve as early indicators of altered attentional development and underscore the importance of inclusive developmental research and early prevention efforts targeting at-risk populations.

2. Adriana Olaya Torres (Universidad Del Desarrollo Santiago, Chile)

Cognitive Reappraisal in Early Childhood: Neural and Attachment-Based Predictors of Emotion Regulation in Preschoolers

Cognitive reappraisal (CR), is considered one of the most adaptive strategies of emotion regulation (ER) in adults. However, its early development remains understudied, particularly in children aged 4 to

6 years. Despite evidence linking ER strategies to positive school adjustment and peer relationships, little is known about CR's precursors, leaving significant knowledge gaps. Researchers emphasize the need to consider dyadic and contextual factors to understand CR development. Attachment quality has been associated with differential use of ER strategies, yet no studies have examined whether CR development is similarly influenced by attachment security. This ongoing project explores whether preschoolers' CR (ages 4–5) is predicted by mother-child attachment security. The study integrates multiple measures, including the Strange Situation Procedure to assess attachment, maternal reports on ER, and EEG recordings to evaluate CR effectiveness via Late Positive Potential (LPP) amplitude. LPP, a well-established neural indicator of effectiveness via Late Positive Potential (LPP) amplitude. LPP, a well-established neural indicator of ER, decreases when individuals reinterpret negative stimuli neutrally. While its reliability in CR research has been demonstrated in adults and children, studies remain limited. The project is currently in the data process phase, expected to conclude in August, with only preliminary results available of 20 mother-child dyads at this stage. Our hypothesis is that higher attachment security predicts more frequent and effective CR use and that this relationship is mediated by CR effectiveness (LPP amplitude). By bridging neurophysiological and relational perspectives, this study advances understanding of early CR development and provides insights into potential intervention targets to foster adaptive ER in early childhood.

3. Anil Karabulut (Scuola IMT Alti Studi, Italy & University of Essex, UK)

Parental Neural Synchrony: Investigating the Role of Attachment during Triadic Mother-Child Father Gameplay

Attachment theory suggests that parents' emotion regulation abilities and responsiveness to their children's needs may be associated with their own attachment representations. When parents effectively co-regulate within the parental relationship—mutually adapting their behaviours, emotions, and physiological states—they may create a more stable caregiving environment for their child. While prior research has examined the role of neural synchrony in parent-child relationships, less is known about neural synchrony between parents during joint caregiving. Grounded in attachment theory, this study explores the link between parental neural synchrony, attachment styles, and caregiving behaviours during a triadic play task involving mothers, fathers, and their 4–8-year-old child. Fifty families participate in a naturalistic cooperative task (Jenga game), during which functional near-infrared spectroscopy (fNIRS) hyperscanning data is collected from both parents. The primary regions of interest are the bilateral dorsolateral prefrontal cortex (dlPFC) and the temporo-parietal junction (TPJ), with four channels per region. Parents' attachment and caregiving styles are measured via self-report questionnaires, and their behaviours are video-coded to assess interaction quality. Neural synchrony is analysed using Wavelet Transform Coherence (WTC) over the 10-minute gameplay duration. Data collection is ongoing (currently N = 18), and preliminary findings will be presented at the conference. We suggest that parental co-regulation is expressed through neural synchrony, thereby offering deeper insights into how attachment and caregiving dynamics unfold during real-time interactions, and ultimately guiding the development of strategies aimed at fostering healthier family functioning.

4. Timotej Glavac (University of Ljubljana, Slovenia)

Unraveling the Genetic Basis of Primary Emotions: Evidence from Dopaminergic, Serotonergic, Oxytocinergic, Opioid, and Neurotrophic Pathways on a Sample of Young Adults

Recent progress in affective neuroscience has clarified the neurobiological foundations of primary emotions, positioning them as promising targets for molecular genetic investigation. Although some studies have linked specific genetic variants to individual differences in emotional traits, a more comprehensive exploration remains limited. This study seeks to address that gap by examining a cohort of 333 young adults from the Slovenian population. Participants completed assessments of primary emotions and were genotyped for 14 single nucleotide polymorphisms (SNPs) across five genes involved in key neuromodulatory systems, including dopamine (COMT: rs4680, rs165815), serotonin (TPH2: rs1843809, rs4290270, rs7305115, rs4570625), oxytocin (OXTR: rs53576, rs968389, rs2268498), the endogenous opioid system (OPRM1: rs1799971, rs677830), and brain derived neurotrophic factor (BDNF: rs6265, rs28722151, rs11030101). The analysis revealed several significant links between these genetic variants and primary emotional traits, many of which were sex specific. Among males, COMT rs4680 was associated with ANGER and SADNESS, while TPH2 variants (rs1843809, rs7305115, rs4570625) were linked to PLAY, CARE, and SADNESS. In females, BDNF variants showed distinct associations, with rs6265 linked to ANGER, and rs28722151 and rs11030101 connected to FEAR and SADNESS. Across the entire sample, interaction effects between the two OPRM1 SNPs were found to influence SADNESS and SEEKING. These findings highlight novel genetic associations with primary emotions and suggest potential relevance for research on personality, psychiatric conditions, and psychopharmacological treatment, given the central role of emotional regulation in mental health.

5. Marcos Domic-Siede (Universidad Catolica del Norte Antofagasta, Chile)

Attachment Shapes Emotion Regulation: Electrophysiological and Pupillometric Evidence from Latin American Research

Emotion regulation (ER) is a fundamental component of mental health, closely intertwined with individual differences in adult attachment orientations. In this talk, I present a series of seven empirical studies conducted with Latin American adult samples, examining how attachment dimensions— anxiety and avoidance—modulate the effectiveness and neurophysiological correlates of two core ER strategies: cognitive reappraisal and expressive suppression. Across these studies, we employed electrophysiological and pupillometric methods, including EEG (oscillatory activity and phase-based connectivity), event-related potentials (Late Positive Potential), continuous pupil size recordings, and self-report measures. Findings consistently show that higher attachment anxiety is associated with heightened physiological responses—such as larger LPP amplitudes and increased pupil dilation—during reappraisal, suggesting greater emotional engagement and regulatory effort. In contrast, higher attachment avoidance is linked to diminished neural engagement, including reduced frontal theta connectivity and attenuated pupil dilation, especially during cognitively demanding regulation tasks. Moreover, we observe that the effectiveness of ER strategies varies not only by attachment orientation but also by neural dynamics, with theta and beta phase-synchronized connectivity patterns distinguishing between reappraisal and suppression. Taken together, these results highlight the relevance of attachment-related dispositions in shaping neurophysiological markers of ER. They also highlight the importance of considering individual differences when investigating the neural bases of ER and may inform future culturally sensitive approaches to psychological intervention.

6. Eileen Lashani (Institut für Psychosoziale Medizin Jena, Deutschland)

Embodied Countertransference – Psychophysiological Responses to Prototypical Attachment Narratives

Attachment theory proposes that early relational experiences shape internal working models that guide how individuals perceive and emotionally respond to others. In therapeutic and interpersonal contexts, these processes can manifest through countertransference – emotional reactions evoked by others that result from own experiences from the past and the relational cues presented. This study explores how different attachment narratives elicit distinct countertransference responses in listeners, reflected in both psychological and physiological reactions. A sample of 100 healthy adults listened to audio recordings of secure, avoidant, and anxious attachment narratives, presented in randomized order. After each sequence, participants completed self-report measures of their socio-emotional reactions. Physiological data, including heart rate, respiration, and skin conductance, were recorded continuously to capture embodied responses. Findings showed that exposure to avoidant and anxious narratives led to reduced well-being. Notably, only the avoidant narrative also evoked negative countertransference reactions and diminished concentration. While the average physiological arousal did not significantly differ between attachment conditions, temporal analyses revealed distinct autonomic response patterns associated with each attachment narrative. These results enhance our understanding of how attachment representations shape both subjective and implicit physiological responses in social contexts. In addition to its implications for everyday social interactions, the study provides further empirical evidence for the relevance of countertransference processes, a key component of psychodynamic psychotherapy.

7. Vinzenz Kaspar Schmid (University of Zurich, Switzerland)

Attachment-based differences in subjective and physiological stress response to a self-related stressor in an experimental setting: preliminary data analysis of the karaoke stress task

Attachment theory postulates that early interactions with caregivers shape secure or insecure (anxious, avoidant) interpersonal schemas influencing social behaviour and emotion regulation throughout life. Previous studies have suggested that individuals with a secure attachment style show good stress resilience, whereas an insecure attachment style, including avoidant and anxious attachment, has been associated with deficits in emotion regulation and stronger responses to stress. However, findings regarding differences, especially between anxious and avoidant attached individuals, remain inconsistent. Therefore, we aimed at investigating individual differences in stress response based on individuals' attachment style classified by the Adult Attachment Interview (AAI), measuring subjective and psychophysiological stress reactivity to the karaoke task. We hypothesize higher subjective and autonomic stress response in anxious compared to secure attached adults, whereas avoidant attached individuals will report lower subjective stress responses despite comparable or elevated physiological activation compared to secure attached individuals. Ninety healthy participants are tested in two sessions including psychological and drugscreening, the AAI, as well as the karaoke task on the second visit. During the karaoke task, subjective ratings including feelings of stress, rejection, and security, as well as objective measures such as facial electromyography (corrugator, zygomaticus), heart-rate variability (HRV), and skin conductance response (SCR) are measured while participants are listening alternating to 10 seconds of neutral (original-artist playback trial) and stress audio files (self-recorded karaoke trials). First preliminary results of group differences regarding subjective and psychophysiological trials). First preliminary results of group differences regarding subjective and psychophysiological stress responses between attachment style groups will be presented and discussed in this talk.

8. Mathilde Gallistl (Universität Jena, Deutschland)

Support or Stress? How Attachment and Relationship Dynamics Associate with Acute Psychosocial Stress in the Presence of the Romantic Partner

Stress is a wide-spread phenomenon and associated with various detrimental health effects. A significant resource for stress buffering is social support. How social support is perceived, however, depends on a multitude of individual and interindividual factors. This study aimed to explore the stress-reducing properties of relationship-inherent variables. We investigated the association of attachment style, relationship quality and dyadic coping, with subjective and physiological stress responses to a psychosocial laboratory stressor in romantic partners. Seventy-nine couples participated, with one partner ("target") undergoing the Trier Social Stress Test and the other ("observer") observing the situation. Besides examining the role of targets' relationship variables, we also assessed the link between observers' relationship variables and targets' stress reactivity. We found that both targets' and observers' insecure-avoidant attachment scores were associated with targets' stress reactivity. In detail, while targets' insecure-avoidant attachment scores were negatively associated with targets' subjective stress experience, observers' insecure-avoidant attachment scores were positively associated with targets' heart rate reactivity. Further, higher insecure-avoidant attachment scores linked to lower psycho-endocrine covariance, i.e., a lower accordance between self-reported and cortisol stress responding. On the one hand, these data may suggest that under stress, insecure-avoidantly attached individuals suppress their experience of stress to preserve a sense of independence as part of their deactivating attachment strategy. The presence of an insecure-avoidantly attached partner during a stressful experience, on the other hand, seems to be a stressor rather than a source of support. Long-term, an insecure-avoidantly attached partner may negatively impact an individual's stress-related health and wellbeing.