



**Universität
Zürich** UZH



International Max Planck
Research School
on the Life Course



**JACOBS
CENTER**

LIFE Fall Academy Zurich 2025

Program

13th – 16th October 2025

Jacobs Center for Productive Youth Development
University of Zurich

Kirchgemeindehaus Paulus Zurich
Milchbuckstrasse 57, 8057, Zurich



Monday 13th October 2025

Kirchgemeindehaus Paulus, Zurich (Grosser Saal, 1st floor)

Time	Presentation	Contributors
09:00 – 09:15	Begin Academy Welcome address and introduction	Moritz Daum & Alexandra Freund
09:15 – 09:30	Short introduction of new LIFE fellows	
09:30 – 11:00	Fellow Talks Session 1 Cognitive Development & Learning Environments Session Chair/Faculty Discussant: Moritz Daum	Esmee Aalders Katharina Zimmermann Marie Klara Schmidt
11:00 – 11:30	Break & Individual Meetings	
11:30 – 12:00	Poster Blitz	
12:00 – 13:00	Poster Session A (8 posters)	Larissa Erchinger Agnese D'Angelo Eileen Rüegg Natalie Hutchins Lydia Brundisch Jessica Bezek Nadine Jait Dennis Saikkonen
13:00 – 14:00	Lunch & Individual Meetings	
14:00 – 15:30	Fellow Talks Session 2 Relationships, Motivation & Stress Session Chair/Faculty Discussant: Jamie Jirout	Natasha Bailey Ziqi Zhang Emily Diamond
15:30 – 16:00	Break & Individual Meetings	
16:00 – 17:00	Lecture 1 Narratives of Aging Well: Magic, Dreams, and Hope Session Chair/Faculty Discussant: Angeline Lillard	Clemens Tesch-Römer
17:00-18:00	Faculty Alumni Award Committee Meeting	Wiebke Bleidorn Kai Cortina Tish Jennings Laurel Raffington
18:00	Walk to Dinner	
18:30 – 22:00	Steering Committee Dinner at Linde Oberstrass Fellows Dinner at Moudi Bar & Restaurant	

Tuesday 14th October 2025

Kirchgemeindehaus Paulus, Zurich (Grosser Saal, 1st floor)

Time	Presentation	Contributors
08:30 – 09:00	Coffee & Snacks	
09:00 – 10:00	Lecture 2 Measurement for Understanding Human Development: A Few Best Practices with an Eye to the Future Introduction: Olivia Metzner Faculty Discussant: Patricia Reuter-Lorenz	Jim Soland
10:00 – 11:00	Fellow Talks Session 3 Methodology & Measurement Faculty Discussant: Cynthia Tong	Leonie Hagitte Maggie Meyer
11:00 – 11:30	Break & Individual Meetings	
11:30 – 12:00	<i>Poster Blitz</i>	
12:00 – 13:00	Poster Session B (8 posters)	Myrto Dolcetti Olivia Allison Sofia Scatolin Rebecca Waugh Jingrun Lin Zino Wellauer Harini Babu Macy Stahl
13:00 – 14:00	Group Photo Lunch & Individual Meetings	
14:00 – 15:30	Fellow Talks Session 4 Bio-Social Mechanisms in Development Faculty Discussant: Lilly Shanahan	Sophie Bell Sepideh Zarandooz Deniz Fraemke
15:30 – 16:00	Break & Individual Meetings	
16:00 – 17:00	Lecture 3 Effective Learning Needs Accurate Metacognition. The Development of Self-Monitoring and Control of Learning during Childhood and Adolescence Introduction: Eileen Rüegg Faculty Discussant: Nora Raschle	Mariëtte van Loon
17:00-18:00	Social Event	
18:00	Tram + Walk to Dinner	
19:00 – 22:00	Dinner at Commercio	

Wednesday 15th October 2025

Kirchgemeindehaus Paulus, Zurich (Grosser Saal, 1st floor)

Time	Presentation	Contributors
08:30 – 09:00	Coffee & Snacks	
09:00 – 11:00	Fellow Talks Session 5 Environment, Training & Aging Neuroscience Faculty Discussant: Nathalie Giroud	Anja Stanojlovic Theodoros Koustakas Agata Patyczek Tydings McClary
11:00 – 11:30	Break & Individual Meetings	
11:30 – 12:00	Poster Blitz	
12:00 – 13:00	Poster Session C (8 posters)	Caroline Poppa Gillian Xu Olivia Metzner Jessica Fervença Ramos Louise von Stockar Linda Kerbl & Rose Wang Maeike Slikkerveer Rosalie Andrae
13:00 – 14:00	Lunch & Individual Meetings	
14:00 – 15:00	Lecture 4 Promises and challenges of digital interventions Introduction: Rosalie Andrae Faculty Discussant: Sebastian Horn	Wiebke Bleidorn
15:00 – 15:30	Break & Individual Meetings	
15:30 – 16:30	Lecture 5 Using LLM to code critical thinking essays Introduction: Jessica Bezek Faculty Discussant: Mike Martin	Kai Cortina
18:00	Reception at Kirchgemeindehaus Paulus Zurich	
18:30 – 22:00	Commencement Dinner at Kirchgemeindehaus Paulus Zurich	

Thursday 16th October 2025

Kirchgemeindehaus Paulus, Zurich (Grosser Saal, 1st floor)

Time	Presentation	Speaker
08:30 – 9:00	Coffee & Snacks	
09:00 – 10:30	Round Tables	
	Table 1: Career & Leadership Pathways in Lifespan Science	Chair: Clemens Tesch-Römer, Moritz Daum
	Table 2: Sharing data, scaling interventions, navigating institutions	Chair: Jaime Jirout
	Table 3: International Research Collaborations and Networking	Chair: Laurel Raffington, Alexandra Freund
	Table 4: Longitudinal Methods	Chair: Charles Driver
	Table 5: Researcher Identity and Transparency: Navigating Bias and Background	Chair: Patti Reuter-Lorenz
10:30	Farewell	Moritz Daum & Alexandra Freund
10:45-11:45	Closed Fellow Session	
12:00	Lunch boxes/End of Academy	

Locations

Location Academy

Kirchgemeindehaus Paulus
Scheuchzerstr. 180/Milchbuckstrasse 57, 8057 Zürich
[Google maps](#)

Steering Committee Dinner

Linde Oberstrass
Universitätsstrasse 19, 8006 Zürich
www.linde-oberstrass.ch

Fellow Dinner

Moudi Bar & Restaurant
Brandschenkestrasse 5, 8001 Zürich
www.moudi-bar.ch

Faculty & Fellow Dinner

Ristorante Commercio
Mühlebachstrasse 2, 8008 Zürich
www.restaurant-commercio.ch

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Wi-Fi Kirchgemeindehaus Paulus

Is available, information will be provided on site.

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Fellow Talks

- Talks are expected to be 15 minutes in length, followed by 15 minutes of discussion.
- The Session Chair/Faculty discussant of fellow presentations is responsible for briefly introducing the presenting fellow and monitoring the time for the presentation as well as the discussion
- Faculty Discussants leads the discussion from a lifespan perspective, assisting with taking commentary/ summarizing the main points of the suggestions advanced.

Fellow Poster Session A, B, & C

- Posters on display throughout the day

Faculty Lecture

- Lectures are expected to be 45 minutes in length, to allow for 10-15 minutes of discussion.
- Fellows introduce the faculty lecture with a brief bio (including affiliation/talk title) – max 1 minute

Session Chairs/Faculty Discussant

- Session chairs/faculty discussant are responsible for following the program organization: Monitoring the time for each presentation and discussion and introducing each event before its occurrence.

Session A

Larissa Erchinger (UZH): How does growing up with one language or many shape how children communicate? This study follows 320 preschoolers to examine how environmental complexity influences their communicative behaviour.

Agnese D'Angelo (UZH): This study examines how communicative environment complexity affects communication in 320 three-year-olds across four language statuses. Environmental aspects and real-time communication are captured using Experience Sampling and Voice Recording.

Eileen Rüegg (UZH): This study investigates how adolescents set and revise learning goals, monitor their progress, and regulate restudy. Across three sessions with 331 students, we test whether goals explain differences in restudy decisions and how these processes shape learning success

Natalie Hutchins (UVA): Are children more curious if they choose the topic and method of learning? Early analyses show 7–8-year-olds who chose what and how they learned in a science activity were more curious, and this curiosity relates to need for autonomy before the task and sense of autonomy after.

Lydia Brundisch (Berlin): Grid cells in the entorhinal cortex provide structured scaffolds for spatial, visual, episodic, and conceptual representations. Are individual differences in entorhinal structural and functional maturation in 6- to 8-year-old children associated with navigation and memory?

Jessica Bezek (UMICH): Youth can show resilience across multiple areas (e.g., mental health, academic functioning), but little is known about how different kinds of resilience cluster within individuals. This project examines different presentations of resilience in adolescence and explores associations with adolescent temperament and brain function.

Nadine Jait (UZH): How do our earliest years shape the way we age? The Zurich Longitudinal Studies (ZLS) follow three generations born across five decades to uncover how early-life experiences influence health, brain, and biological aging across the lifespan

Dennis Saikkonen (UZH): How do children's brains decode others' thoughts, intentions and feelings? Using fMRI and multivariate analyses, we trace how cognitive and affective Theory of Mind unfold from visual cortex to pre-frontal regions, shaping decisions across development.

Session B

Myrto Dolcetti (UZH): Do romantic partners synchronize their facial expressions during support interactions? And is emotional synchrony a stable characteristic of a couple or does it vary situationally serving distinct functions? Join me at the poster for insights into couples' emotional synchrony!

Olivia Allison (UVA): Have you ever wondered how and when we begin to socially engage with others? The current study sought to better understand whether and how a network of social brain regions is linked to the development of positive social engagement within the first six months of life.

Sofia Scatolin (UZH): How are socioemotional skills passed from parents to children? This study explores the inter-generational transfer of socioemotional skills by combining fMRI and behavioral data in entire families.

Rebecca Waugh (UVA): Will one parent work harder to balance an underperforming partner? Prairie vole parents do. In this rare, biparental mammalian species, both mothers and fathers adjust their care effort dynamically over time to balance the overall care provided by the dyad.

Jingrun Lin (UVA): Our study examines whether metabolic state alters social proximity seeking behaviors. Participants were randomly assigned to a hunger or satiety condition, while completing a computerized foraging task with social others. Check out my poster to see if our findings differ between the two conditions

Harini Babu (UMICH): We examined the effects of HD-tDCS on resting-state functional connectivity in older adults using fNIRS. Preliminary results show active stimulation leads to decreases in connectivity compared to sham, suggesting increased network segregation. Additional graph theory analyses are planned.

Macy Stahl (UVA): Postmenopausal females display reduced nitric oxide bioavailability, which can negatively impact cardiovascular and cognitive health. Impaired oral nitrate reducing capacity following menopause limits nitric oxide restoration strategies, making microbiome-targeted therapies key.

Session C

Gillian (Rujun) Xu (UVA): Our study demonstrated that not only do researchers need to care about and account for the item-level DIF in their RCT treatment, they also need to do it comprehensively to prevent distorted results. Check out my poster for more details!

Jessica Fervença Ramos (UZH): Children with cCHD show distinct trajectories of behavioural difficulties. Some face increasing difficulties with age, while others improve or show normal behaviour. Higher child IQ and better maternal mental health predict better outcomes, highlighting the need for neurodevelopmental follow-ups.

Louise von Stockar (UZH): Theoretical considerations and first ideas for a dissertation topic within a project investigating the motivational processes that allow people in the transition to retirement structure their new life phase in meaningful and health-promoting ways.

Linda Kerbel (Berlin) & Rose Wang (UMICH): Imagine you made a drawing on the way here. Would you want to know what the other LIFE fellows really think of it?

Maeike Slikkerveer (UZH): Children learn to say 'no' early, but mastering how to use and understand negation in an adult-like way takes longer. In this study, we will investigate how negated sentences are mentally represented when speaking and whether there are differences between children and adults.

Rosalie Andrea (UZH): First sex × well-being: Who leads, who follows? 15 Pairfam waves map selection vs. socialization across gender and relationship context.

Talk 1: Narratives of Aging Well: Magic, Dreams, and Hope

Clemens Tesch-Römer

Narratives of aging refer to descriptions of positively evaluated endpoints of growing old. The benchmark in aging research is Rowe and Kahn's model, which defines successful aging as maintaining good health, adequate fitness and productive activity into old age. The biology of ageing recently has added narratives (and empirical research) on healthy ageing in respect to extending longevity and rejuvenation. For a large portion of the population, frailty and cognitive impairment is the reality of ageing, and it is by no means certain if health promotion, prevention and other interventions will make it disappear. In addition, social inequality has shown a major impact on longevity and health in old age. Moreover, acknowledging diversity could lead to varying definitions of ageing well. Striving for ageing well should be inclusive, acknowledging different forms and pathways of ageing. Conceptions of ageing well can vary widely, and may include not only good health and functioning, but also life-satisfaction, wisdom, supporting environments, and good care.

Talk 2: Measurement for Understanding Human Development: A Few Best Practices with an Eye to the Future

Jim Soland

Every step of the measurement process—from defining the construct and creating a measure to producing and using scores—can affect our understanding of how humans develop. Yet, best practices for each of these steps are often underdeveloped, not understood, or outright ignored. In this talk, I will cover the spectrum of the measurement process and go over some best practices, including ones I wish I had known just a few years ago. The presentation is intended both to help students expand their psychometric toolkits and generate conversation about measurement in their own work. In the talk, I will also spend time looking to the future of measurement, including how large language models (LLMs) are changing the game, and new possibilities for adaptive, personalized assessment.

Talk 3: Effective Learning Needs Accurate Metacognition. The Development of Self-Monitoring and Control of Learning during Childhood and Adolescence

Mariëtte van Loon

This talk addresses how metacognition can be measured in real time through judgments and decisions made while working on tasks. Metacognitive skills develop throughout childhood and adolescence and become increasingly important for successful school learning. The talk will cover approaches to measuring metacognition, outline its developmental trajectory, and describe its relation to cognitive capacity. In addition, it will highlight how social factors can influence and drive the development of metacognitive skills.

Talk 4: Promises and challenges of digital interventions

Wiebke Bleidorn

Recent evidence supporting volitional personality change holds great promise for both the scientific study and practical application of personality interventions. With the rise of smartphone technology, innovative approaches—such as mobile apps, digital coaching, and gamified interventions—offer scalable and widely accessible tools for personality interventions. However, several challenges remain, including the theoretical foundation, the design, and effectiveness of intervention strategies. In this talk, I will make a case for the changeability of personality traits, review existing research on volitional personality change, and present findings from a new smartphone intervention study aimed at reducing neuroticism in the general public. I will conclude with a discussion of future directions toward a theoretical model of volitional personality change.

Talk 5: Using LLM to Code Critical Thinking Essays

Kai S. Cortina

Essay coding for research purposes is undergoing a remarkable transition. Even with little knowledge of AI, essay coding can be done as reliable - if not more reliable - than with trained coders. In this presentation, I use our Performance Assessment of Critical Thinking (Bryn Bower Series) to demonstrate the process of AI coding and also discuss pitfalls. In general, the more structured the coding rubric, the better the results, as indicated by preliminary findings of the comparison of AI codings with two human coders of the same essays.

Talk 1: Quantifying the complexity of early social and language environments

Aalders, E.M., Daum, M.M., Wermelinger, S.

Multilingualism is common among children worldwide, but it varies widely. Understanding how different language environments shape children's communication development is essential. Previous research often categorised children as either monolingual or multilingual. In two projects, we take a more nuanced approach: we evaluated the diversity associated with growing up multilingually and its relation to children's communicative behaviours and developmental outcomes.

In the first project, we applied three complementary measures to quantify environmental diversity: linguistic distance, language entropy, and context entropy. Language and context entropy capture the degree of variability and balance in a child's language exposure and social contexts (Gullifer & Titone, 2020). Linguistic distance, based on lexical similarity between languages, reflects the linguistic demands multilingual children face, with greater distance linked to more challenging acquisition trajectories (Gampe et al., 2021).

Entropy and linguistic distance were computed using caregiver questionnaires. We examined their predictive value for receptive vocabulary outcomes through the BILEX, a touchscreen-based test, suitable for multilingual assessment (Gampe et al., 2018). Findings indicate quadratic associations between language entropy and vocabulary size and a positive relationship between linguistic distance and vocabulary size. These results suggest that diverse, but balanced, linguistic environments can support language development.

In the second project, an ongoing extension of this work, we assess children's social network sizes (Burke et al., 2022) and their relationship to pragmatic communication skills, including visual perspective taking (Agostini et al., 2024; Burke et al., 2023; Fan et al., 2015) and interpretation of ambiguous referential cues (Yow & Markman, 2011). This aims to capture how socially diverse environments foster stronger communicative skills (Wermelinger et al., 2024).

Together, these projects aim to identify early communicative conditions that shape individual trajectories. By modelling environmental diversity and its associations with language and social-cognitive outcomes, we offer tools to better understand development across the life course.

Keywords: Diversity, Multilingualism, Social Networks, Communication, Development

Talk 2: Beyond Effort: Cognitive Load Types and Their Relations with Metacognitive Monitoring, Control, and Learning Performance

Zimmermann, Katharina, Rüegg, Eileen, Van Loon, Mariëtte

Metacognition involves assessing one's cognitive processes (monitoring) and adjusting them accordingly (control). Cognitive load theory, which describes how mental effort is regulated in light of limited processing resources, has been recognized as an important framework for understanding metacognition. However, most studies assessing cognitive load rely on a single-item measure of perceived effort, which is often equated with cognitive load, but refers specifically to one type of cognitive load – germane load. Moreover, the relationship between cognitive load and monitoring remains inconsistent, with findings suggesting both positive and negative relationships. This study addresses these gaps by assessing all three types of cognitive load – intrinsic, germane, and extraneous. Importantly, instead of focusing only on monitoring, we examined how monitoring judgments inform control decisions (monitoring-based restudy). Using a metacognitive learning task, 377 adolescents learned Japanese kanji across three sessions over two weeks. We assessed metacognitive skills, including monitoring (confidence judgments), control (restudy decisions), and task performance, employing a multilevel path modeling approach to account for both time-series and cross-sectional nested data structures. Results show that all cognitive load types are positively associated with monitoring but not with how monitoring informs control decisions. This suggests that cognitive load may influence monitoring-based restudy in a more complex way than previously assumed. Follow-up analyses will further explore this relationship. For cognitive load, intrinsic load emerged as the strongest predictor of task performance. Taken together, these findings underscore the differentiated role of cognitive load in metacognition and highlight the need for nuanced, person-centered approaches in future research.

Keywords: cognitive load types, monitoring, control decisions, performance

Talk 3: Memory in the Making: How Children Build Memories from Lab to Life

Schmidt, Marie Klara, Ngo, Chi T.

Memory abilities undergo significant development throughout childhood, yet the relationship between changes observed in controlled laboratory settings and how children retain their everyday lives remains poorly understood. Experimental research demonstrates that the ability to recall fine-grained details and the ability to generalize across experiences follow distinct developmental pathways. Some accounts suggest that young children prioritize generalization over detailed recall. At the same time, work on autobiographical memory shows that even very young children are capable of remembering specific personally meaningful life events, such as family outings, months after they occur. These seemingly divergent findings raise important questions about why some events endure in memory while others fade, and how such outcomes align with laboratory-based measures.

As part of my doctoral project, the forthcoming MemoryMaker study will address these questions using a longitudinal design that follows children between the ages of four and ten. We will combine standardized memory tasks, a naturalistic film-based paradigm, and the assessment of memory for personal experiences through wearable cameras. This approach makes it possible to examine how real-world memories are formed and sustained, and how these processes correspond to performance in experimental tasks. We will also consider factors such as emotional engagement, event uniqueness, and the ways in which children segment ongoing experience, with the goal of developing a more comprehensive account of memory development in everyday contexts.

Keywords: Childhood Memory Development, Personal Life Event Memory, Wearable Cameras, Event Cognition, fMRI

Talk 4: Developmental Origins of Polygenic and Epigenetic Indices of Cognition and Educational Attainment

Fraemke, Deniz, Walter, Jan-Henrik, et al., Harden, Kathryn-Paige, Malanchini, Margherita, Tucker-Drob, Elliot-Max, Raffington, Laurel

While the capacity to learn from the environment is underpinned by genetic transmission, the process of cognitive development is epigenetic. Genomic studies have generated DNA-based polygenic indices (PGIs) and an epigenetic index (Epigenetic-g) associated with adult cognition and educational attainment. Here, we leverage four large developmental cohorts (Texas Twin Project, Future of Families and Child Wellbeing Study, TwinLife, and Generation-R; >10,000 children and adolescents) to probe the developmental origins of these biomarkers.

Key preliminary findings indicate that polygenic and epigenetic biomarkers account for largely distinct, rather than overlapping, variance in cognition and academic achievement. PGIs were consistently associated with longitudinal changes in cognitive development, whereas Epigenetic-g demonstrated moderate stability from birth through adolescence, suggesting it captures early life set-points relevant to adult cognitive performance. Twin analyses indicated that Epigenetic-g and cognition are partly linked through shared genetic influences and idiosyncratic environmental processes, such as prenatal conditions or random developmental variation. Both PGIs and Epigenetic-g were correlated with childhood socioeconomic status, reflecting biosocial influences relevant to developmental trajectories.

Taken together, our findings underscore that cognitive development is not reducible to genetic or environmental determinants, but instead emerges from the dynamic biosocial interplay of genetic influences, epigenetic regulation, and socioeconomic contexts.

Keywords: Cognition; Education; Polygenic Index; Epigenetics; Gene-Environment Interplay

Talk 5: Associations of parenting with epigenetic biological aging and physiological health in children and adolescents

Zarandooz, Sepideh, Willems, Yayouk E., deSteiguer, Abby, Wertz, Jasmin, Czamara, Darina, Tucker-Drob, Elliot M., Harden, K. Paige, Raffington, Laurel

Previous research has shown that children growing up in environments characterized by family-level and neighborhood-level socioeconomic disadvantage show evidence of faster methylation profile scores of biological aging, which in turn was associated with child health risk factors. According to the Family Stress Model, economic hardship can lead to emotional distress for parents, which can result in increased parental conflict, harsher or more inconsistent parenting practices, and a decrease in supportive parenting behaviors, which ultimately may influence child development. In this preregistered study, we leverage a large child and adolescent twin sample including $n = 1325$ 8-20-year-olds from the US Texas Twin Project to examine if parenting is associated with methylation measures of biological aging (DunedinPACE, GrimAge Acceleration, PhenoAge Acceleration), differential methylation at stress system regulators (FKBP5 and NR3C1), and child health risk factors (pubertal development, body mass index, and diseases associated with accelerated aging and inflammation). We probe whether potential associations between parenting behaviors and child biological aging and health risk factors are accounted for by socioeconomic variables and persist

in within-family analyses. Given well-established sex differences in biological aging as well as sex-specific environmental influences on lifespan, we consider sex as a moderator in our analyses.

These analyses will provide insights into how parenting may shape biological aging and health risk during childhood and adolescence, and whether such associations are independent of socioeconomic context.

Keywords: Parenting; Epigenetics; DNA-methylation; Biological aging; Child health

Talk 6: The Lifespan Cognitive Health Risk Score: Bootstrap Twin Cross-Validation of a Prediction Index for Cognitive Decline

Sophie A. Bell, Christopher R. Beam, Alyssa C. Kam, Ebrahim Zandi, Deborah W. Davis, Deborah Finkel, Eric Turkheimer

Tools that quantify lifelong risk accumulation are crucial for identifying asymptomatic individuals on a trajectory toward cognitive decline. Dementia risk scores often lack information on early-life environment, cognitive development, and genetic or epigenetic factors. Existing prediction models are also vulnerable to overfitting, optimizing for specific samples and overestimating predictive validity. We developed the Lifespan Cognitive Health Risk (LCHR) score and applied several strategies to minimize these issues. Participants were 359 middle-aged twins (81 complete monozygotic pairs, 57 dizygotic pairs) from the Louisville Twin Study (LTS) with prospective measures of cognitive ability in childhood (Mage = 13.8 ± 2.4 years) and midlife (Mage = 48.5 ± 9.6 years). We identified risk and protective factors associated with change in IQ (ΔIQ) from childhood to midlife. LCHR scores were computed using a regression-optimized approach, where indicators were weighted by predictive strength, and a unit-weighted sum of all predictors. We applied a “quasi-causal” twin framework to strengthen causal inference between risk factors and cognitive decline. For cross-validation, we developed a bootstrap twin design in which the LCHR was trained on one randomly selected twin from each pair, then tested on the co-twin. We repeated this across 1,000 samples, yielding a distribution of cross-validated effect sizes. Higher childhood socioeconomic status and educational attainment protected against cognitive decline, while childhood trauma, smoking, psychopathology, lung function, gait speed, grip strength, and functional limitations increased risk. A polygenic index and accelerated epigenetic age were additional risk factors. The regression-optimized LCHR explained 29% of the variance remaining in midlife IQ after controlling for childhood IQ (partial $R^2 = 0.29$, $p < .001$), and the unit-weighted LCHR explained 19% (partial $R^2 = 0.19$, $p < .001$). Cross-validation showed that the model predicted ΔIQ in co-twins with an average R^2 of 0.11 (90% CI: 0.05–0.18) across 1,000 bootstrapped samples.

Keywords: Aging, Cognition, Risk Prediction

Talk 7: Assessing Measurement Invariance using SEM Trees and Moderated Nonlinear Factor Analysis

Leonie Hagitte, Andreas M. Brandmaier

Ensuring the validity of psychological assessments is crucial, yet differential item functioning (DIF) can threaten measurement invariance (MI) when test items function differently across groups. Recent calls for improved DIF detection methods emphasize the need for more advanced statistical approaches.

Moderated nonlinear factor analysis (MNLFA) is a recent approach for assessing MI via parameter moderation within a single-group confirmatory factor analysis framework. MNLFA evaluates MI across multiple continuous and categorical covariates, and accounts for heteroskedasticity by modeling factor and residual variances as functions of these covariates. While MNLFA offers continuous moderation of factor loadings, it requires a priori specification of covariates and their functional relationships.

In contrast, structural equation modeling (SEM) trees and forests are data-driven, non-parametric methods that use recursive partitioning to identify latent subgroups in which model parameters differ, without assuming specific functional forms or predefined covariate effects. These approaches allow for nonlinear moderation of factor loadings and can reveal complex interaction effects, enabling the exploratory detection of DIF.

In this study, we conduct a Monte Carlo simulation to compare the performance of MNLFA and SEM trees and forests in detecting DIF and assessing MI under varying conditions. Specifically, we evaluated their effectiveness in identifying non-invariance, detecting relevant covariates, and adjusting for DIF. Our findings will inform best practices for selecting statistical techniques to ensure MI in psychological assessment.

Keywords: structural equation modeling, measurement invariance, differential item functioning

Talk 8: A Few Bad Apples? Understanding predictors of police officer's racial bias in search decisions.

Margaret Meyer, Richard Gonzalez

The most widely-used indices for studying bias in police searches are threshold, benchmark, and outcome tests, which examine police officers' performance when searching civilians. In a pre-registered study, we compare those widely used measures of police bias to a novel bias measure we developed to account for the unknown contraband rate. We use data from over 22,000 officers across 10 U.S. states to explore the relationship between police officer bias, demographic characteristics of the police officers, and the environments in which officers conduct their police work.

Surprisingly, in South Carolina (N = 825), officer race and age are not predictive of racial bias. Instead, county level regional bias (as captured by the IAT) is predictive of police bias. In South Carolina the average race discrepancy between White and Black community members on the IAT predicts an officer's propensity for searching more innocent Black drivers than innocent White drivers in that county. This effect holds when controlling for an individual officer's department, age, and race. Importantly, the weapons version of the IAT predicts the discrepancy between recovery rates of contraband (including weapons) for drivers of different races. Neither IAT predicts a police officer searching one race of drivers over another. These findings suggest that measures of police bias capture different psychological processes.

The talk will further discuss how these measures of bias perform across the full set of 10 US police departments as well as the importance of looking at individual officer data and exclusion criteria. Indeed of the 22,000 officers in our final dataset roughly 45% of these officers only search minority drivers (i.e., search 0 White drivers). Yet 0% of the officers search only White drivers. Without looking at the raw data at the individual level, researchers would miss these unique officers because the officers would fail the inclusion criteria of having bias metrics for White and minority drivers. The implications of such exclusion criteria and the benefits of studying individual officers will be discussed.

Keywords: Decision Making, Racial Bias, Law, Police

Talk 9: From friends to physiology: Adolescent peer relationship behaviors predict adult stress reactivity

Bailey, Natasha A., Field, Nathan H., Uchino, Bert N., Allen, Joseph P.

Adolescence is a critical period for developing the skills necessary to foster high-quality interpersonal relationships, which in turn are likely to have implications for physical health across the lifespan, including autonomic nervous system (ANS) regulation. Understanding how unsupportive and supportive behaviors in adolescent friendships contribute to later physiological functioning is crucial for identifying pathways to both maladaptive and adaptive ANS reactivity to stress. Despite cross-sectional evidence that hostility predicts blunted physiological reactivity and supportive behavior is associated with adaptive physiological arousal, little is known about the long-term associations between social behaviors and stress responsivity over time. The aim of the current study was to investigate how negativity, provision of emotional support, and relationship satisfaction in adolescent peer relationships potentially shape physiological reactivity to stress in adulthood. Participants were from a longitudinal study of social development in adolescence (N = 184; 99 female, 85 male). Each year between ages 13-15, adolescents and a close peer participated in a videotaped supportive discussion task coded for negativity to the peer, emotional support given to the peer, and the peer's perceived satisfaction with the interaction. At age 29, participants underwent a laboratory-based stress task, with physiological reactivity measured through pre-ejection period (PEP) and respiratory sinus arrhythmia (RSA). Results indicated that negativity to peers predicted blunted RSA reactivity to stress, while emotional support given to peers predicted more adaptive PEP and RSA reactivity and greater peer satisfaction predicted adaptive RSA reactivity. These findings underscore the potential unique contributions of adolescent friendships to adult physiological functioning.

Keywords: adolescent peer relationships, physiological reactivity, longitudinal

Talk 10: The role of instrumental value for the experience of effort: a computational model and empirical evidence from a first experiment

Ziqi Zhang, Alexandra M. Freund

Effort is a core concept in motivation psychology, yet its underlying mechanisms remain debated. We propose that effort is not merely a cost to be minimized but rather reflects a trade-off between three factors: (1) the opportunity costs of investing into alternative activities, (2) the enjoyment of investing intensively into a given activity, and (3) its instrumental value. We developed a computational model that formalizes these components and specifies how increases in instrumental value can reduce the experience of effort. Here, we present evidence from a first experiment

designed to isolate instrumentality. We are testing the impact of the instrumental value of investment of means by varying the reward levels (low, medium, high) associated with the same level of investment, while keeping both the activity and the performance constant. Primary outcomes are self-reported effort and exhaustion after every three trials; secondary outcomes include enjoyment and perceived opportunity costs. The model predicts a monotonic decrease in experienced effort as instrumentality increases, with opportunity costs and enjoyment held constant by the fixed activity and intensity. This experiment is designed to directly test this prediction, and we will present preliminary empirical results.

Keywords: Effort, Multi-object tracking, Investment of means

Talk 11: Can we use large language models to accurately and reliably assess relationship quality?

Emily Diamond, Hong-Yi Koo, Jordan Bacharach, Amie Gordon

High-quality romantic relationships are critical for health and wellbeing, yet empirically assessing relationship quality remains challenging. Traditional self-report methods have several limitations, including unreliable prediction of changes in relationship quality over time, susceptibility to social desirability bias, and poor differentiation between constructs. We evaluate a novel approach to assessing relationship quality by leveraging large language models (LLMs). Three LLMs (ChatGPT, Llama, Claude) will extract ratings on core components of relationship quality (e.g., satisfaction, commitment) from relationship narratives written by participants ($N > 300$). We evaluate the validity of this method by examining correlations between LLM-derived construct ratings and participants' own self-reported ratings. We also examine reliability over time and across LLMs, assess LLM accuracy across constructs, and explore their reasoning process. Finally, we assess participants' preferences between these two approaches. This work explores an innovative tool for the assessment of relationship quality that more closely aligns with how people talk about their relationships in everyday life.

Keywords: Relationships, GenAI, Measurement

Talk 12: Prenatal Environmental Exposures and Early Brain Development: The Potential of a Twin Neuroimaging Study

Anja Stanojlovic, Nora Moog, Christian Bamberg, Simone Kühn

From a life course perspective, the timing of an event is crucial for shaping developmental trajectories of the brain and mental health. While humans are exposed to environmental influences throughout life, their impact depends strongly on when they occur. The prenatal and early postnatal periods are especially sensitive, as rapid neurodevelopment and incomplete protective systems make the brain highly vulnerable to lasting effects. Prenatal risks such as air pollution, nutrition, or stress have been linked to alterations in brain structure and increased vulnerability to psychiatric disorders. However, most studies either fail to account for genetic influences or begin too late to capture the earliest origins of neurodevelopmental variation.

The NeoTwins study addresses these challenges by investigating how maternal exposures during pregnancy influence early brain development in twins. The study is designed to minimise postnatal confounding and directly test whether measurable prenatal exposures already map onto individual differences in newborn brain structure and function. Maternal exposures are characterised using a combination of ecological momentary assessment, biomarkers, and geocoded residential data. Infant brain measures are obtained with multimodal MRI during the early postnatal period and complemented by biological profiling to capture variation in early-life environments.

Altogether, this study aims to generate a comprehensive characterisation of the influence of the prenatal environment on neonatal brain development, while also accounting for genetic background and shared familial factors. Genetically identical monozygotic twins, in particular, provide a powerful test of whether differences in prenatal exposure translate into differences in brain structure, connectivity, or early behavioural outcomes. The findings will not only improve our understanding of the origins of neurodevelopmental variation but also help identify modifiable risk factors that could inform prevention and early intervention strategies.

Keywords: Prenatal environment, Early-life, Brain development, Magnetic resonance imaging (MRI), Twin study

Talk 13: Investigating vocal-training induced brain plasticity in development: Introducing the CHOROS studies

Theodoros Koustakas, Eleftheria Papadaki, Ulman Lindenberger

As one of the oldest forms of musical expression, singing presents a unique opportunity to study brain plasticity and the development of auditory-motor interactions through musical training. Accurate singing requires the flexible integration of real-time auditory and somatosensory feedback mechanisms, incorporating neural structures that extend beyond those involved in speech and other musical activities (Zatorre, 2024). Strong evidence suggests that early-life musical training results in long-lasting and pronounced neural adaptations (Steele et al., 2013), yet the developmental mechanisms underlying these changes remain poorly understood. To address this, we are introducing the CHOROS studies: a longitudinal investigation into the impact of vocal training on the development of musical skills in childhood as well as the associated structural changes and functional adaptations in the brain. In CHOROS-I, we will test the sensitivity of an age-appropriate task battery and assess the relationship between music perception and production across children with different training backgrounds. Building on this, CHOROS-II will longitudinally follow children receiving choir singing training and age-matched controls, combining the refined behavioral measures with Magnetic Resonance Imaging (MRI) to examine training-related changes in behavior, brain structure and function over time. Together, these studies aim to shed light on the influence of early vocal training on brain development and study the emergence of musical skills in childhood, with implications for music education and cognitive development.

Keywords: Plasticity; Music; Singing; MRI; longitudinal

Talk 14: Autonomic aging and the blue spot

Patyczek A., Reinwarth E., Gaebler M., Villringer A.

The autonomic nervous system undergoes notable changes with aging, characterized by increased sympathetic and decreased parasympathetic activity. This imbalance results in reduced autonomic flexibility and elevated risk of cardiovascular diseases. The locus coeruleus (LC), a key node of the sympathetic nervous system and the brain's primary source of norepinephrine, is important in regulating arousal and stress responses. However, it is particularly vulnerable to neurodegeneration as we age, as evidenced by a decline in magnetic resonance imaging (MRI) signal intensity starting around age 60. Cross-sectional research has established a link between LC integrity and heart rate variability (HRV), a measure of parasympathetic activity. Here, we aim to test the bidirectional relationship between LC signal intensity, parasympathetic activity (HRV), and aging longitudinally. Using data from the Berlin Aging Study II (BASE II), we plan to assess whether baseline measures of LC signal intensity or resting HRV can predict changes in each other over time. Additionally, we will evaluate the link between the rates of decrease in LC signal intensity and resting HRV. Potential results that the decline in one system may accelerate deterioration in the other could ultimately inform targeted interventions for both autonomic and brain health.

Keywords: Autonomic nervous system, aging, neuroimaging

Talk 15: Developmental trajectories of memory generalization and specificity across childhood

Tydings M. McClary, Elisa S. Buchberger, Ann-Kathrin Joechner, Ulman Lindenberger, Chi T. Ngo¹, & Markus Werkle-Bergner

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, children's 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. In this talk, I will present preliminary behavioral longitudinal results from the first two timepoints. These results indicate that the behavioral gains in generalization outpace those in pattern separation and completion, especially during early childhood. Moreover, different indices of generalization seem to develop together, suggesting a shared

mechanism underlying these tasks. Finally, I will give an outlook on future projects planned with this extensive data set.

Keywords: memory development, longitudinal, childhood, brain development, hippocampal development, generalization, memory specificity, pattern separation, pattern completion

Communicative Development in Early Childhood: The Role of Environmental Complexity

Erchinger, Larissa, Prof. Dr. Daum, Moritz M., Dr. Wermelinger, Stephanie

During early childhood the complexity of the environment shapes how children learn to communicate. Complex environments that involve multiple languages or dialects may foster more adaptive communication (Wermelinger et al., 2024). This longitudinal study investigates how the complexity of children's communicative environment, defined by the number of languages spoken and their linguistic distance, influences communicative development during the preschool years. We compare children with four language profiles: monolingual, bidialectal (two closely related language varieties), bilingual, and multilingual (more than two languages). We assess 320 children (~80 per group) once at 2;9-3;3 and once 4;9-5;3 years, two key stages when communication shifts from early integration of verbal and non-verbal cues to near-adult-like proficiency. Communication is measured using three adapted lab-based tasks. Children's likelihood of repairing misunderstandings is assessed through a cooperative activity that includes a staged communicative breakdown. Their integration of nonverbal cues is examined in a task where children interpret conflicting cues, such as gaze and body orientation, to find a hidden object. Perspective-taking is evaluated through a task in which children must select a toy based on verbal instructions from a communication partner who cannot see all available objects, requiring them to consider the other's visual perspective.

Based on the COME Perspective (Wermelinger et al., 2024), we propose that communicative differences reflect the demands of children's environments. Environments characterised by greater complexity, such as more languages or more distant languages, may prompt children to develop a broader range of communicative strategies and greater flexibility. Consequently, multilingual children may differ from their peers in these aspects. By examining how complexity shapes communication, this study deepens our understanding of early social and language development, highlighting how early experiences may lay the foundation for communicative flexibility and adaptation throughout life.

Keywords: multilingualism, communication, perspective-taking, misunderstandings, pragmatics

The Role of Communicative Environment in Multilingual Children's Communication

Agnese D'Angelo, Prof. Dr. Daum, Moritz M., Dr. Wermelinger, Stephanie

Children differ in their communication. Building on the COMmunicative-Experience perspective (COME; Wermelinger et al., 2024), we explore how children's exposure and interaction with diverse communicative, social, and cultural contexts (i.e., communicative environment) affects communication across children with different language status (e.g., monolingual, bilingual). Effective communication involves interlocutors coordinating an exchange and employing strategies that foster mutual understanding; when these strategies break down, non-effective communication may occur (e.g., misunderstandings). We hypothesise that children immersed in a more complex communicative environment may experience a higher frequency of non-effective communication. The complexity of the communicative environment is a multidimensional construct. High complexity involves diverse languages, norms, settings, and cultural practices, whereas low complexity features stable patterns, fewer interlocutors, consistent settings, and limited variation.

We are collecting data from 320 children aged 3 years (2;9-3;3 years old) across four language status (i.e., monolingual, bidialectal, bilingual, multilingual; n = 80 per group). Data are being collected through Experience Sampling Methods (ESM), Voice-Activated Recording (VAR), and caregiver questionnaires to capture rich, ecologically valid snapshots of children's everyday communicative environment. Adopting a data-driven approach, we aim to identify key predictors of non-effective communication both between and within children via Bayesian regression models with Projection Predictive Feature Selection and standard regression analyses. By systematically analysing real-world communication, this research aims to clarify how the communicative environment shapes effective communication among children.

Keywords: early communication, multilingual development, ecological methods, effective communication

The Dynamics of Goal Setting, Revision, and Metacognitive Control in Adolescents' Learning

Rüegg, Eileen, Zimmermann, Katharina, van Loon, Mariëtte

Previous research emphasizes the importance of setting and revising goals for successful learning. Metacognitive monitoring (judgments of one's own learning) and learning goals are assumed to guide metacognitive control (regulation of study behaviors such as deciding what to restudy). However, little is known about how goals and monitoring shape control during learning and affect performance. Understanding this is particularly relevant in adolescence, when independent learning becomes more important and developmental gains increase flexibility in strategic learning.

This study investigates the interplay between self-set goals, monitoring judgments, goal revision, monitoring-based control, and learning success in adolescents. A sample of 331 students (Mage = 12) completed three sessions in which they learned difficult concepts. In each session, they set a task goal before studying, learned 12 concepts, completed a test with confidence judgments, and had the opportunity to restudy and revise their answers. After the study phase, but before restudying, they indicated their goal again, allowing examination of goal revision.

We expect to find individual differences in control strategies, whereby some students restudy items already judged as learned, while others focus on items judged as not yet learned. We hypothesize that these differences can be explained by goals. Adolescents who pursue lower task goals may restudy well-learned items, while those who pursue higher task goals may restudy not-yet-learned items. Furthermore, we predict that maintaining high goals and restudying not-yet-learned items will lead to higher performance. The poster presents descriptive statistics and preliminary analyses of the relationships between goal setting, goal revision, control, and task performance.

Keywords: metacognition, learning, learning goals, adolescence

The Impact of Choice on Children's Curiosity and Learning in Science Activities

Hutchins, Natalie, Jirout, Jamie

Curiosity plays a central role in early childhood when children are inclined to explore, ask questions, and seek out information. Autonomy supportive environments enhance intrinsic motivation and engagement (Cordova & Lepper, 1996), so choice- an important component of autonomy- should enhance children's curiosity and learning. Prior work shows that autonomy satisfaction increases curiosity in adults (Schutte & Malouff, 2019), and scaffolded choice can support engagement in children (Bamberger & Tal, 2007). This study tested the role of choice in promoting children's curiosity during structured science activities.

Children (ages 7-8; N = 95 of 130; data collection ongoing) completed a general curiosity survey (Jirout et al., in prep) and a need for autonomy scale (modified Johnston & Finney, 2010). They were randomly assigned to either a Child Choice condition, selecting a game character, content (3 different biomes), and learning modality (3 different ways to learn about content), or a Researcher Choice condition, where these elements were assigned using a yoked design. Content was matched across topic and condition. State curiosity, sense of autonomy, and learning were assessed post-activity.

Preliminary results show that children who chose what and how to learn reported significantly higher state curiosity ($p = .03$). Need for (before task) and sense of (after task) autonomy both predicted curiosity ($p = .002$). These initial findings suggest that providing choice may enhance children's curiosity, and that both sense of autonomy and need for autonomy may also play important roles. Further analysis will explore how choice impacts learning, interest, and motivation for future learning.

Keywords: Curiosity, Choice, Autonomy, Education

Entorhinal grid-like codes in 6- to 8-year-old children

Lydia Brundisch, Yangwen Xu, Christian F. Doeller, Markus Werkle-Bergner

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 investigate the role of the emergence of entorhinal grid-like codes in the development of navigational strategies and spatial memory in late childhood, we collected fMRI data from 6- to 8-year-old children executing an object location memory task in a virtual arena. Participants were drawn from an ongoing longitudinal cohort, affording detailed phenotyping of the development of hippocampal structure and memory function across multiple prior assessment points. Grid-like codes were identified as the hexadirectional modulation of the BOLD signal as a function of walking directions, with magnitude and stability reflecting the functional maturation of the entorhinal cortex. In addition, we contrasted functional engagement of the striatum and hippocampus to dissociate rule-learning from place-learning mechanisms. All neural indicators were included in a model to predict spatial memory accuracy. By integrating the macroscopic grid-code proxy with existing longitudinal data, we advance un-

derstanding of how structural and functional maturation within the entorhinal–hippocampal system unfolds and interrelates across multiple levels of analysis.

Keywords: grid-like codes, hippocampal formation, development, spatial memory

Person-Centered Profiles of Resilience to Neighborhood Disadvantage in Youth: Temperament and Neural Correlates

Bezek, Jessica L., Shewark, Elizabeth A., Suarez, Gabriella L., Westerman, Heidi B., Tomlinson, Rachel C., Klump, Kelly L., Burt, S. Alexandra, Hyde, Luke W.

Growing up in a disadvantaged neighborhood is associated with greater risk for negative developmental outcomes, including poorer social, educational, and psychological functioning. However, many youth go on to show resilience, defined as positive adaptation in the face of adversity. Recent research emphasizes that resilience can manifest in multiple behavioral domains (e.g., psychological, social) and that individuals may show resilience in one area but not another. Nevertheless, limited research has utilized person-centered methods to examine different clusters of resilience domains within individuals. Further, more research is needed during adolescence to understand these person-centered resilience clusters based on individual-level characteristics, particularly temperament and neural activation. In a sample of 708 adolescent twins exposed to neighborhood disadvantage, latent profile analyses identified three clusters of resilience across psychological, social, and academic domains: 1) Low Multidomain Resilience, 2) Low Psychological Resilience, High Social Resilience, and 3) High Multidomain Resilience. We examined associations between resilience profile membership, adolescent temperament, and brain activation during three fMRI tasks involving response inhibition, reward processing, and socioemotional face processing. Youth demonstrating resilience in at least one domain reported higher levels of activation control and pleasure sensitivity compared to youth with low multidomain resilience. Furthermore, youth with low multidomain resilience exhibited lower left amygdala activation to threat compared to youth in other resilience profiles. These findings bolster evidence for within-person clusters of resilience and offer new insights into temperamental and neural correlates of distinct resilience profiles to neighborhood disadvantage in youth.

Keywords: Resilience, Temperament, fMRI, Neighborhood Disadvantage

Early Life, Lasting Impact? Early Life Roots of Biological Aging and Lifelong Health – The Next Phase of the Zurich Longitudinal Studies

Jait, Nadine, S., MSc, Zeller, Céline, J., PhD, Fervença Ramos, Jessica, MSc, Jenni, Oskar, G., MD, Wehrle, Flavia, M., PhD

Objective: Developmental scientists are increasingly calling to shift the focus in aging research towards the early decades of life, and thus to adopt a lifespan perspective on health and ageing. However, long-term longitudinal studies remain rare, limiting insight into these processes. Therefore, this research project aims to extend the Zurich Longitudinal Studies (ZLS) with a second-assessment-wave in adulthood to investigate long-term developmental trajectories from birth into late adulthood.

Sample: The ZLS consist of three cohorts born two decades apart: ZLS-1 included 409 healthy infants born between 1954-1961, ZLS-2 enrolled 258 preterm and full-term infants born between 1974-1979, and ZLS-3 comprised 295 children of ZLS-1 participants born between 1973-2002. All cohorts were recruited at birth and assessed over 20 times from infancy through young adulthood. Currently, the first-assessment-wave in adulthood is being conducted (ZLS-1: n=202, ZLS-2: n=106; ZLS-3: ongoing). The target sample size for the upcoming second-assessment-wave is based on 80% of the first-wave participants: ZLS-1: n=162, ZLS-2: n=85, ZLS-3: approx. n=120.

Measures: A comprehensive test battery will be used, ensuring longitudinal comparability across development. These assessments cover physical, motor, cognitive, and social domains of health and development (e.g. hand x-ray, blood sample, ZNA-2, WAIS-IV, SF-12). For the first time, this wave will include a brain-MRI to assess structural and functional properties of the brain.

Research Focus: We aim to understand how early childhood factors are linked to biological ageing later in life, estimated from blood, brain, and bone markers, and parameters such as balance, grip strength, and lung function.

Keywords: longitudinal study, study protocol, childhood, lifespan, biological ageing

From Visual Cortex to Prefrontal Cortex Regions: Decoding Sequential Mentalizing and Socioemotional Decisions in Childhood

Saikkonen Dennis, Borbás Réka, Dimanova Plamina, Scatolin Sofia, Federici Elena, Raschle Nora M.

Mentalizing, the ability to infer others' thoughts, feelings, and intentions, is a fundamental social skill linked to well-being and impaired in psychopathology (Quesque et al., 2024; Schwarzer et al., 2024). Core brain regions involved in mentalizing include medial prefrontal cortex (mPFC), precuneus, and temporoparietal junction (TPJ) (Molenberghs et al., 2016). These findings mainly used mass-univariate analysis of fMRI data. However, multivariate pattern analysis (MVPA) further allows more sensitive investigation of distributed neural codes (Haxby, 2012). We will use the CAToon task and decoding methods to examine neural correlates of affective and cognitive Theory of Mind (ToM), test how neural responses vary with socioemotional decisions and track sequential unfolding of mentalizing.

Children aged 6–14 performed the CAToon fMRI task consisting of story and decision phase with experimental (affective (AT), cognitive (CT) ToM) and control (physical causality (PC)) conditions. Group-level contrasts will be assessed using whole-brain and ROI analyses (TPJ, precuneus, mPFC). Choice-dependent effects will be probed by re-labeling AT trials by outcome (positive vs. negative) and MVPA with The Decoding Toolbox. Sequential processing will be examined by modeling each story panel and applying time-resolved MVPA.

Compared to control, preliminary results in affective and cognitive ToM trials in children show activation a.o. in vmPFC, TPJ and precuneus. Analyses of positive vs. negative outcome choices are ongoing; we expect differential patterns in affective regions. MVPA of sequential panels are ongoing; based on Tan et al. (2022) and preliminary findings, we expect patterns to evolve from visual cortex to TPJ and into PFC regions, predicting socioemotional decisions.

Differentiating cognitive and affective ToM, testing choice-dependent neural responses and decoding sequential unfolding of mentalizing, this study will reveal neural response patterns underlying socioemotional decisions in typically developing children, which are critical for refining models of typical and atypical socioemotional development across the life course.

Keywords: Theory of Mind, Socioemotional Development, Brain Function, fMRI, MVPA

Emotional Synchrony in Dyadic Coping: Associations with Partners' Momentary Behavior and Evaluation of Received Support

Dolcetti Myrto, Bar-Kalifa Eran, Horn B. Andrea, Machluf-Ruttner Reut, Bodenmann Guy, Martin Mike, Meier Tabea

Emotional interdependence is thought to be a key determinant of couples' functioning. One manifestation of interdependence is emotional synchrony (i.e., covariation between two individuals' emotional states or behavior). Empirical evidence from various types of dyads suggests that synchrony in positive or supportive contexts is associated with positive outcomes such as perceived empathy and responsiveness. However, few studies examined emotional synchrony in couples' dyadic coping interactions (i.e., a type of support discussion during which partners cope with stress together as a couple). Moreover, research on synchrony in partners' facial emotional expressions - a central nonverbal channel for communicating emotional states to others - is sparse. This study aims to examine how synchrony in partners' facially displayed emotional valence unfolds and if both patterns of synchrony (in-phase and anti-phase) manifest themselves during couples' dyadic coping interactions. Furthermore, by taking a momentary approach we aim to understand how the degree of emotional synchrony fluctuates moment-to-moment depending on the type of dyadic coping behavior provided (e.g., emotion-focused, problem-focused dyadic coping or active listening). Finally, we will study how the degree of overall as well as momentary synchrony is associated with the evaluation of received support. Possible age group differences will be examined. We will use observational data from 119 couples (Mage = 59.75 years, SD = 15.55, range = 30-91) belonging in three age groups, which participated in video-recorded dyadic coping interactions in the laboratory. Partners' facially displayed emotional valence was automatically assessed with the Noldus FaceReader 9.1 software, whereas partners' dyadic coping behavior was coded at 10-second intervals. Cross-correlation functions for the calculation of synchrony and multilevel models will be applied. The preregistered hypotheses, analyses plan as well as preliminary results of the study will be presented. The findings will reveal important insights into how emotional synchrony may foster beneficial couples' support interactions.

Keywords: synchrony, facial emotional expressions, dyadic coping interaction, couples, lifespan

Social smiling and laughter is linked to enhanced functional brain connectivity in young infants' default mode network

Olivia Allison, Caroline Kelsey, Tobias Grossmann

Positive social engagement relies upon the motivation to attend to, take pleasure in, and maintain social interactions. The default mode network (DMN) comprises superior temporal and medial prefrontal brain regions previously shown to be involved in infants' processing of emotionally expressive and smiling faces in the first year (Grossmann, 2015, 2017), and longitudinally predicting increased sociability in the second year (Grossmann, 2024; Grossmann & Allison, 2024). It is currently unknown whether and how positive social engagement in young infants relates to variability in functional connectivity in the DMN. The current study tested the pre-registered hypothesis that variability in positive social engagement predicts resting-state functional connectivity in the DMN among 5-month-old infants (N=35; M age = 5.8 months; SD = 0.44 months; n = 24 male) using functional near infrared spectroscopy (fNIRS). Positive social engagement was assessed using both behavioral coding from a mother and infant free-play interaction (Social Engagement, Social Smiling and Laughter, and Social Touch) and the parent-reported Infant Behavior Questionnaire- Revised (Social Approach and Smiling and Laughing) (Putnam et al., 2014). First, neuroimaging results from a paired samples t-test showed that infants displayed greater functional connectivity in the right (M= 0.28, SD= 0.28) than in the left (M= 0.18, SD= 0.20) hemisphere of the DMN ($t[47] = -2.09, p = 0.04$). Second, results of multiple linear models revealed that higher levels of infants' smiling and laughter during daily interactions with caregivers positively predicted DMN functional connectivity in the left hemisphere ($F[5, 29] = 3.16, p = .02, R^2 = .35$), but not the right hemisphere ($F[5, 29] = 0.78, p = .57, R^2 = .12$). This suggests that, already by 5 months of age, infants' functional connectivity in the DMN is associated with variability in infants' positive affect displayed during social interactions in close relationships.

Keywords: functional brain connectivity, social behavior, positive affect, infancy

Parent-child functional neural similarity during socioemotional movie-watching

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Socioemotional skills are transmitted across generations. This intergenerational transfer arises from the complex interplay between genetic and environmental factors. While the intergenerational transmission of socioemotional skills has been behaviorally well-documented, less is known about these transfer effects on brain function. This study investigates the intergenerational transfer of neural activity and behavior relevant for socioemotional functioning. 71 families (96 children, 6-14 years, 44 girls; 103 parents, 30-61, 58 mothers; 141 parent-child dyads) underwent fMRI while watching scenes from the movie Inside Out. Participants also completed behavioral assessments on

socioemotional skills and mental well-being. Functional neural similarity was quantified by the correlation coefficients between the time series of each brain region and computed across all possible adult-child dyads. Linear regressions were used to assess whether related dyads showed greater neural similarity than unrelated dyads across the whole brain and in regions related to socioemotional processing (e.g., prefrontal cortex (PFC), temporo-parietal junction (TPJ), anterior cingulate cortex (ACC)). Across the whole brain, parent-child dyads exhibited greater neural similarity than unrelated adult-child dyads ($p = .002$). Focusing on specific parent-child pairings, it was observed that mother-daughter and father-son showed greater neural similarity than the respective unrelated adult-child dyads, but mother-son and father-daughter dyads did not. Region of interest analyses confirmed greater similarity for parent-child dyads in regions implicated in socioemotional processing, such as the right dorsolateral PFC ($p < .001$, $pFWD = .032$), left TPJ ($p = .038$), left ACC ($p = .005$), among others. Associations between neural similarity and behavioral similarities will be investigated in future steps. These findings highlight a sex-specific intergenerational transfer of neural activity during socioemotional processing, reflected by activation similarity across the whole-brain and in prefrontal and temporal regions. Our results provide insights into the neurobiological mechanisms that may underly the intergenerational transmission of socioemotional skills.

Keywords: socioemotional development, intergenerational transmission, fMRI

Dynamic Duos: Learning to Care as a Pair in the Biparental Prairie Vole

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Paternal care has long-lasting impacts on offspring social behavior, both in humans and other biparental species. However, fatherhood has historically been understudied and the dynamics of mother-father adjustments in care based on their partner's behavior remain unclear. This study investigates how individuals adjust parenting behavior based on their experience as part of a parenting dyad in the biparental prairie vole (*Microtus ochrogaster*). Parental care effort was observed over two consecutive litters in 110 parent dyads, measured by the amount of care provided by each parent to the pups in their first three days. The difference in care provided between the first and second litter indicates how dyads shift care strategies from naive (litter 1) to experienced (litter 2) contexts. Overall, mothers provided more care than fathers and the total sum of provided care by both parents was 9% lower with experience. Parental care was more negatively correlated following experience. We investigated whether the difference in the amount of care provided by each parent in the parent dyad in the naive context drives changes in experienced parent behavior, and found that these differences significantly predict the likelihood of reducing or increasing parental care effort in the experienced context for both the male and female partner. Our results indicate that individual care behavior is adjusted based on the parenting effort of the dyadic partner. A larger difference in care between the two parents in the naive context corresponds to greater shifts in care by both parents in the experienced context. In sum, two patterns emerge in experienced parents that appear to improve parental care efficiency: 1) parents take on a more compensatory pattern of caregiving over time and 2) are able to adapt to initial differences in care such that investments in care become more balanced between mothers and fathers over time.

Keywords: Fatherhood, parenting, biparental, learning

Examining Social Proximity Seeking in Hunger vs. Satiety Contrast Through Behavioral Ecology

Jingrun Lin, Jennifer MacCormack, James Coan

Background: Social Baseline Theory posits that humans assume proximity to others; when this assumption is disrupted, individuals experience increased demands on their personal resources, potentially compromising health outcomes (Coan & Beckes, 2013). Tomova et al. (2020) demonstrated that social craving after isolation activated mid-brain regions similar to those engaged during hunger, raising the possibility that hunger may amplify social proximity seeking through shared reinforcement mechanisms. Thus, this study aims to examine whether metabolic state such as hunger and satiety alters social proximity-seeking behavior using a behavioral ecology paradigm. Method: We recruited 69 participants (50 Female, 19 Male) via UVA undergraduate subject pool who were randomly assigned to either a hunger or satiety condition. Participants completed a computerized foraging task in which they collected virtual berries under the threat of a bear attack, with up to five social agents available as potential companions. Results: Findings revealed significant main effects related to the number of social agents present (estimate = -0.27, SE = 0.06, $p < .001$), adjusting for threat vigilance, reward sensitivity, and individual BMI. Specifically, participants were more likely to leave the foraging patch when fewer social agents were available, highlighting social proximity as an ecologically rational behavior. Additionally, social proximity seeking behaviors did not differ as individual metabolic state alters (estimate = -0.01, SE = 0.03, $p = .638$). Discussion: These findings suggest that the availability of social others strongly shapes foraging decisions. Contrary to our predictions, hunger did not alter social proximity seeking behaviors, implying that social motivation may operate independently of metabolic needs. This highlights the robust-

ness of social proximity as a fundamental driver of foraging behaviors and points to future work examining other physiological states that may modulate its expression.

Keywords: Social Proximity, Hunger, Behavioral Ecology

HearHere - Mapping and Resolving Sensory Challenges in the Urban Soundscape

Wellauer, Zino Hannes, Meyer, Martin, Neff, Patrick

Urban noise pollution affects over 1.1 million Swiss residents daily, with daytime traffic noise disturbance rising from 23% in 2011 to 35.6% in 2023 (BAFU). Conventional noise maps focus on traffic and decibel levels, neglecting non-vehicular sources and diverse sensory experiences. Vulnerable groups such as the 466 million people worldwide with hearing loss (WHO), the 10–15% experiencing tinnitus [1], and the estimated 20% with decreased sound tolerance [2, 3] are rarely considered in urban planning, despite evidence linking noise to cardiovascular disease, dementia, and social isolation [4].

HearHere is a citizen science project co-designed with advocacy groups (Pro Audito, Autismus Schweiz, Schweizer Gesellschaft für Akustik) and the City of Zurich's Department of Environment and Health (UGZ) to create an inclusive, data-driven noise map for Zurich. Using a mobile app, 250 participants (at least 40% from vulnerable hearing or neurodiverse populations) will collect geolocated sound measurements, 10-second audio snippets, and subjective ratings, while receiving just-in-time feedback and health recommendations to navigate challenging soundscapes. Data will identify ≥ 20 auditory hotspots, combining objective sound metrics (SPL, spectra) with lived experience.

An iterative Delphi process [5, 6] across four workshops enables citizens to define research

priorities, evaluate hotspots and questionnaires, and co-create ≥ 5 actionable recommendations for inclusive soundscape design, such as acoustic relief zones, green buffers, and cultural sound enrichment [7, 8, 9]. Expected outcomes are a publicly accessible interactive noise map, an open dataset, and a policy brief, equipping decision-makers with evidence for healthier, more inclusive cities while empowering citizens most affected by urban noise.

Keywords: Hearing sensitivities, Noise Mapping, Delphi-Rounds, citizen science, 3D Audio

The concurrent effects of high definition transcranial direct current stimulation on resting state functional connectivity in older adults: An investigation with functional near-infrared spectroscopy

Babu, Harini.J, Nguyen, Phuong.N., Hurston-Gates, Emma Hampstead, Benjamin.M., Reuter-Lorenz, Patricia.A., Iordan, Alexandru.D.

Aging is commonly associated with gradual changes in cognitive function. However, more pronounced decline may be symptomatic of mild cognitive impairment (MCI), characterized by learning and memory deficits while generally maintaining everyday function. Developing interventions for individuals with MCI could help prevent or delay further cognitive impairment. Transcranial direct current stimulation (tDCS) has shown promise as a non-invasive treatment capable of modulating brain activity. However, the mechanisms underlying tDCS remain largely unknown and due to methodological variations, the effects of tDCS as measured by various neuroimaging techniques have been inconsistent, particularly in older adults (Patel et al., 2020). To address this gap, we investigated the concurrent effects of high-definition (HD)-tDCS on resting-state functional connectivity, measured with functional near-infrared spectroscopy (fNIRS), using a double-blind design. fNIRS uses near-infrared light to monitor changes in cortical blood oxygenation, providing an indirect index of brain activity. Twelve healthy older adults (HOA) underwent a total of 28 minutes of resting-state fNIRS. The protocol included an eight-minute pre-stimulation period (baseline) at zero mA, followed by 20 minutes of either sham or active (2 mA) HD-tDCS, targeting the left inferior frontal cortex. Preliminary results show that the active group exhibited greater decreases in functional connectivity between the targeted region of interest and the rest of the brain compared to the sham group. In contrast, active and sham groups differed minimally in connectivity between the contralateral region and the rest of the brain. Together with univariate brain activity results (presented at prior Academy), which indicated increased brain activation during active stimulation, these findings suggest that HD-tDCS promotes more localized neural engagement within a targeted region, possibly reflecting greater network segregation. Additional follow-up graph theory analyses will further evaluate network changes over time.

Keywords: High-definition transcranial direct current stimulation (HD-tDCS), functional near-infrared spectroscopy (fNIRS), resting-state functional connectivity, aging

Oral Nitrate Reducing Capacity in Postmenopausal Females and Older Males

Stahl, Macy, Clark, Kaylen, Grammer, Emily, Derella, Cassandra, Weltman, Arthur, Allen, Jason

Background: Postmenopausal females (PMF) exhibit decreased nitric oxide (NO) bioavailability, likely secondary to the loss of circulating estrogen during menopause. Decreased NO negatively impacts cardiovascular and cognitive health, making restoration of bioavailable NO clinically important. Oral inorganic nitrate supplementation is a novel approach to potentially increase NO bioavailability in PMF, though efficacy is limited by the ability of the oral microbiome to reduce inorganic nitrate to nitrite. While young females demonstrate augmented oral nitrate reducing capacity (ONRC) compared to males, previous studies suggest changes in the oral microbiome during menopause. In the present study, we aimed to compare the ONRC of PMF and older males to evaluate the potential of oral inorganic nitrate supplementation as an approach to increase NO bioavailability in PMF.

Methods: Six PMF (Age: 62.17 ± 7.83 yrs) and 5 males (Age: 72.8 ± 7.83 yrs) completed a single bout of salivary testing that included a non-stimulated saliva sample and an ONRC assessment. A blood sample was collected for assessment of plasma nitrite. Samples were frozen and analyzed at a later date for nitrite via ozone-based chemiluminescence. Comparisons between males and females for ONRC and saliva nitrite were assessed via Mann-Whitney U tests. All data are presented as median (IQR), and significance was set a priori at $p < 0.05$.

Results: ONRC was lower in PMF: 196.20 (234.27) μ M compared to males: 801.20 (543.95) μ M ($p = 0.009$). Participants were un-supplemented, so as expected, there were no differences in saliva nitrite ($p = 0.082$) or plasma nitrite ($p = 0.190$).

Conclusions: These data are the first to suggest that PMF have impaired ONRC compared to older males. Investigating strategies to increase oral nitrate-reducing bacteria (ex: probiotics, chronic supplementation) may provide an approach to improve the therapeutic utility of inorganic nitrate supplementation to increase NO bioavailability in PMF.

Keywords: Menopause, Nitric Oxide, Oral Microbiome

What stays in the file drawer - and why? Insights from 150+ authors in the social and behavioral sciences

Poppa, Caroline, Nießen, Désirée, Daikeler, Jessica, Silber, Henning, Weiß, Bernd, Richter, David

Publication bias is the prioritized and selective reporting of scientifically significant results and often stems from the assumption that statistically significant research findings are rated as more “important,” “credible,” “valuable,” or “publishable” than non-significant or null findings. Previous work has shown that this assumption leads researchers to be much less likely to publish their insignificant or null findings, a phenomenon termed “file drawer bias.” Ironically, despite the core aim of psychological research being to unravel the human mind with its decision-making processes, needs, and aims, it lacks insight into its own knowledge reproduction process—the publication process itself. That is, how do scientists decide which results they want to (or should) write up and publish, and which not?

After analysing the publication outcomes of 178 studies conducted in two representative German panel infrastructures (GESIS Panel and SOEP-IS), we reached out to all their submission authors. Over the course of three months, we collected study-related information on analysis status, past and current publication efforts, authors’ attitudes toward open science, and general beliefs about publishing in academia from more than 150 of these submission authors. This poster presents first insights into the prevalence of unpublished but completed research and highlights the most common reasons and barriers associated with (non-)publication. By examining these patterns, we aim to shed light on how research findings travel (or fail to travel) from the file drawer to the scientific record.

Keywords: publication bias, open science, file drawer

Testing Item-level Heterogeneous Treatment Effect (IL-HTE) with Penalized DIF Detection—Do Effects go away?

Xu, Rujun (Gillian), Soland, James

Researchers developing educational and social policy interventions typically use survey- or test-based outcomes to evaluate the treatment effects; however, conclusions can be distorted if item functioning differs across treatment and control groups or other relevant subgroups. In their previous article, Gilbert et al. (2024) verified that item-level heterogeneous treatment effects (IL-HTE) played a critical role in program and policy evaluation; testing heterogeneous treatment effects (HTE) at measure level can lead to overlooked item-level features and thus inaccurate conclusions. In this study, we tested IL-HTE with penalized DIF detection (a machine learning method commonly known as regularization). Penalized DIF detection demonstrated clear advantages of selecting DIF effects (i.e., reduced Type I errors, effectively estimate a large number of parameters in the MNLFA model; Belzak [2023]). Using publicly available datasets from the Item Response Warehouse (IRW), we tested IL-HTE by including treatment status, covariates, and the interaction terms between treatment status and covariates as DIF predictors to investigate if the IL-HTE detected in Gilbert et al.’s study persists after using the penalized method to prevent improper randomization. Preliminary results indicate that the treatment status turns out to be the significant predictor of item-level DIF when solely included in the model for half of the datasets, but the effects are reduced or even diminished after incorporating covariates or covariates plus interaction terms into the model. The results indicate that item-level DIF can be significant due to improper randomization such that MNLFA main covariates soak it up. Further discussion and limitation will be teased out in my presentation.

Keywords: Item-level heterogeneous treatment effects (IL-HTE), Moderated Non-linear Factor Analysis (MNLFA), Regularized Differential Item Functioning (Reg-DIF), penalization

From Words to Data: Classifying Teachers’ Autonomy-Supportive Messages in the Classroom with a Large Language Model

Metzner, Olivia, Reichow, Insa, Wulff, Dirk, Reeve, Johnmarshall, Lazarides, Rebecca

Teachers’ autonomy-supportive behaviors are central to student motivation and achievement, often assessed through either self-reports or observer reports. However, self-reports can be prone to social desirability bias and observer reports can be resource-intensive and limited to small samples. Artificial intelligence (AI), particularly Large Language Models (LLMs), offers a scalable alternative. More specifically, zero- and few-shot prompting provide a strategy, using pre-trained models guided by task-specific prompts without retraining. In this study, we analyzed the research question: Can LLMs zero- and few-shot ability reliably and validly classify teachers’ autonomy-supportive messages? Teacher transcripts from 50 mathematics teachers (46% women; Mage=43 years) covering 138 lessons on quadratic equations in grades 8–10 from the international TALIS-Video Study were used. A coding scheme identified 14 types of autonomy-supportive messages. Four trained raters annotate the material. Inter-rater reliability (IRR) will be calculated on 20% of the data. The remaining data will be split evenly among raters. Zero- and few-shot experiments will test whether a pre-trained LLM can classify messages in alignment with human annotations. Initial results indicate that teachers do not use all autonomy-supportive message types equally. Based on the material annotated

so far, most frequently classified messages were related to praise as informational feedback, expressing encouragement, and responsiveness to students' questions and comments. These may reflect the typical frontal-receptive discourse structure of mathematics lessons. In contrast, messages promoting co-determination or co-choice regarding content, social forms, or pace were rare. These may be more common in lessons emphasizing co-design, such as learning stations, which have been less observed in the current data annotated. Further validation will compare IRR between human raters and LLM-predictions, and examine whether LLM-based classifications predict longitudinal associations between teacher messages and student motivation.

Keywords: artificial intelligence, large language models, teachers' motivational messages

Trajectories of Behavioural Difficulties in Children with Complex Congenital Heart Disease (cCHD): A Longitudinal Study from 4 to 13 years

Fervença Ramos, Jessica, Ehrler, Melanie, Wehrle, Flavia M., Valsangiacomo Buechel, Emanuela R., Beck, Ingrid, Latal, Beatrice, Landolt, Markus A.

Trajectories of behavioural difficulties in children with complex congenital heart disease (cCHD) remain unclear. This study longitudinally investigated behaviour in children with cCHD from preschool to adolescence.

Children with cCHD (n=137) who underwent infant open-heart surgery were prospectively enrolled. Behaviour was assessed with the parent-reported Strengths and Difficulties questionnaire at 4, 6, 10, and 13 years. Age and sex-adjusted scores were compared to norms. Latent class growth analysis (LCGA) identified subgroups with distinct behavioural trajectories. Predictors for normal behaviour (class identified by LCGA) were investigated. Self-reported quality of life (QoL) and special educational needs (SEN) in adolescence were compared between those with and without problematic behavioural trajectories (defined by LCGA).

Children had more emotional problems at 6 years, and more emotional problems, hyperactivity, and total behavioural difficulties at 13 years compared to norms (all $p < 0.05$). LCGA identified three subgroups: Class 1 had increasing difficulties with age (n=36[26%], $pslope < 0.001$); Class 2 showed early difficulties improving with age (n=25[18%], $pslope < 0.001$); Class 3 demonstrated normal behaviour across ages (n=76[55%], $pslope = 0.28$). Higher child IQ (OR=1.1, $p = 0.020$) and better maternal mental health (OR=0.9, $p = 0.004$) at 4 years predicted normal behaviour. Normal behaviour was linked to less SEN ($p < 0.01$), but not significantly to QoL ($p = 0.059$).

Trajectories of behavioural difficulties are evident in a subgroup of children with cCHD and are associated with SEN. Higher IQ and better maternal mental health predict favourable behaviour, whereas CHD severity appears less relevant. These findings underscore the importance of neurodevelopmental follow-ups and family-centred care to identify and support children at-risk.

Keywords: behaviour, children, congenital heart disease, longitudinal, neurodevelopment

Transitioning into Retirement: Initial Ideas for a PhD Thesis

Louise von Stockar

The transition to retirement is a major developmental milestone in adulthood, involving opportunities such as reduced stress, and challenges such as loss of daily structure. Existing research has focussed on static predictors such as marriage status or financial resources to explain the heterogeneity in how well individuals adapt to retirement, rather than psychological adaptation processes. The project "Transition to Retirement: The Role of Goals and Motives", funded by the Swiss National Science Foundation (PIs: Veronika Brandstätter and Alexandra M. Freund), seeks to identify the motivational processes that help individuals structure their new life phase in meaningful and health-promoting ways. The focus of the project is on how the congruence between job characteristics and measures of intrinsic motivation predict goal selection processes, and what factors are instrumental in supporting people to disengage, maintain, and (re-)engage with goals that will lead to improved wellbeing.

Within the framework of lifespan research, the distinct period of retirement allows us to study how people navigate major life changes and shift their goals to align with intrinsic motives. This poster will outline initial theoretical considerations regarding motivational and developmental processes in the transition to retirement, and first approaches for a dissertation topic within this project will be presented.

Keywords: life transitions, retirement, goal setting, implicit motives

Boundedly curious? What children do not want to know about themselves

Rose Wang & Linda Kerbl

Information about the self can be both helpful and harmful. It can affirm one's identity and abilities, but it can also threaten confidence. Adults manage this tension by strategically choosing which self-related feedback to seek or avoid (see Burghart et al., 2025). From a young age, children, too, receive feedback from parents, teachers, and peers—whether they are shy, talented at math, or bad at drawing. While such feedback can be important for developing a sense of self, not all of it is desirable. Two key factors that influence its value are valence (whether it is positive or negative) and instrumentality (whether it helps to improve). We propose a study to examine how children weigh these factors when deciding whether to learn what others think of their work. In the study, 120 children aged 5 to 9 years in Ann Arbor and Berlin will complete a drawing task (adapted from Zhu et al., 2023). They are then given the choice to reveal or avoid feedback on their drawing from two virtual evaluators, one mostly nice and one mostly critical (valence). In addition, we will vary whether they can use the feedback to improve their drawing (instrumentality). We hypothesize that children will be more likely to avoid negative feedback, and that this tendency will be more pronounced in older children, reflecting an emerging self-protective strategy. However, we expect that even older children will engage with negative feedback when it is instrumental. We will further explore how children's own evaluation of their drawing and prior experiences with feedback relate to their decisions to seek or avoid it. Our aim is to understand how children's deliberate ignorance of feedback develops as they learn to balance their curiosity with the expected costs and benefits of information.

Keywords: deliberate ignorance, curiosity, cognitive development, self-related feedback

Learning to say “no”: The development of negation in online language production

Slikkerveer, Maeike, Daum, Moritz M., Sauppe, Sebastian

Negation, the means to state what is not the case, is a central function of language and communication (as in “The cat is sleeping” vs. “The cat is not sleeping”). While the comprehension and the acquisition of using negation have been well studied, there is little knowledge about how speakers prepare to utter negated sentences.

There are two competing theories to explain how negation is processed during language comprehension: In the one-step account, the meaning of a sentence is represented as negated right away. By contrast, in the two-step account, processing negative sentences involves first representing the affirmative meaning of the sentence (i.e., without the negation), and then adding the negation in a second processing step. Furthermore, children's acquisition of sentence negation is relatively well-studied. In German, after using negation particles, such as ‘no’ and ‘not’, in isolation, children start using the particles in multi-word utterances when they are about 1.5 years old. Around age 3, most German-speaking children are able to negate sentences in an adult-like way. However, even at the age of 4, they still struggle to comprehend negative sentences.

The current project tackles two open questions from the literature using a picture description task in which participants produce both affirmative and negative sentences: (1) Does the production of negated sentences use the same representations as comprehension processes, and do these follow the one- or the two-step account? (2) How do children learn to plan and process negated utterances online? We will use pupillometry (or possibly EEG), to study the psychophysiological dynamics of producing negated sentences in adults and children to uncover what it entails to say “no” throughout child development. The results will also contribute to our general understanding of children's developmental trajectory of learning how to use language in real-time.

Keywords: Child language acquisition, Sentence processing, Language production, Negation

Transactions Between Well-Being and First Sexual Experiences

Andrae, Rosalie, Krämer, Michael D., Hopwood, Christopher J., Denissen, Jaap, Scholz, Urte, Bleidorn, Wiebke

This study investigates the transactional relationship between indicators of well-being (self-esteem, depressiveness, life satisfaction) and first sexual intercourse—an important developmental milestone during adolescence—using 15 waves of longitudinal data from the nationally representative German family panel study (Pairfam). Extending prior research, we examine whether average levels and pre-event changes in self-esteem, depressiveness, and life satisfaction predict the timing of first intercourse (selection effects). Additionally, we test whether this life event is associated with subsequent changes in these well-being indicators (socialization effects). Analyses draw on data from up to 7,000 adolescents aged 14–19 at baseline and apply logistic, linear, and Cox regression models to examine selection effects, as well as fixed-effects regression models to assess within-person changes following first intercourse. To provide a more comprehensive understanding of these developmental transactions, we test whether gender, physical attractiveness, relationship status, and relationship satisfaction moderate selection effects, and whether gender, re-

relationship status, relationship satisfaction, and the timing of first intercourse moderate socialization effects. By integrating multiple indicators of well-being, robust longitudinal modeling techniques, and theoretically relevant moderators, this study offers a nuanced and developmentally sensitive analysis of how psychological adjustment and sexual behavior unfold in tandem across adolescence and early adulthood. Findings will offer theoretical insights into well-being trajectories across a major life transition, with implications for youth development and mental health interventions.

Keywords: first sexual experiences; adolescence; emerging adulthood; life events; well-being