Learning and Motivation in Developmental Psychopathology and Psychotherapy

Our lab studies motivation, learning and decision-making across human development. We are interested in how these cognitive processes change over the course of the lifespan and how different environmental factors (e.g. social influences, uncontrollability or uncertainty of the environment) shape them across development. One focus is to investigate these processes in healthy children, adolescents and adults. We are also particularly interested in understanding how these processes might be altered in different psychiatric disorders and their risk factors. Many mental health problems manifest themselves already during childhood and adolescence. This is why we are convinced that childhood and adolescence are particularly important phases to study in order to gain a better understanding of why these psychopathologies arise.

With this agenda, our aim is to contribute to a deeper insight into psychiatric symptoms and their treatment, across diagnostic boundaries. A particular interest lies in the question of whether we can use some of our tools from cognitive neuroscience to define predictors, mediators and moderators for the efficacy of learning-based intervention and prevention in children, adolescents and adults. The long-term goal here is on the one hand to improve clinical decision-making (e.g. in terms of differential indication and individualised treatment), but on the other hand also to contribute to an understanding of how and why psychological treatments work.

We employ cross-sectional and longitudinal studies which include cognitive experiments and questionnaires, often times combined with neural measurements derived from (f)MRI and EEG, to pinpoint developmental trajectories both on the behavioural as well as on the neural level. We often use computational models to analyse these data, as they promise mechanistically-informed insight into these cognitive processes (a.k.a. "Developmental Computational Psychiatry") .

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