

List of important publications

1. Experience in empirical autism research

Matyjek, M., Bayer, M., Dziobek, I. (2020), Autistic Traits Affect Reward Anticipation but not Reception. *Scientific Reports* 10, 8396. doi.org/10.1038/s41598-020-65345-x
and

Matyjek, M., Bayer, M., Dziobek, I. (2022, preprint), Reward Responsiveness across Autism and Autistic Traits – Evidence from Neuronal, Autonomic, and Behavioural Levels. *medRxiv* (preprint). doi.org/10.1101/2022.02.11.22270801

In these two articles, we investigated whether autism is characterised by lowered responsiveness to rewards. We designed a paradigm addressing contributing yet neglected factors in the literature and used a multi-method approach: event-related brain potentials in both, expended to behavioural and autonomic measures in the second study. We found clear evidence for enhanced neuronal and autonomic but typical behavioural responsiveness to rewards in autism, which suggests that it is linked to generally preserved, although less neurally efficient processing. Importantly, this offers the first coherent interpretation of the contradictory evidence from clinical practice and empirical research on reward processing in autism.

With these projects, I trained and demonstrated the skill of **analytical thinking**, the **ability to work with empirical, complex time-series and non-sequential data** and **multiple methodologies** of different time scales (EEG, eye tracking, reaction times). Moreover, the second study was conducted with high emphasis **on autism-friendly elements**. For example, I prepared a [study booklet](#) containing detailed descriptions of the lab spaces, experimenters, timings, sensory stimulation, etc., following the [AFK's checklist](#) for autism-friendly research. I have been contacted multiple times by autistic persons (both participants and external individuals) with positive feedback about it. Thanks to this, I am equipped in knowledge and materials to continue making my next studies autism friendly. Finally, I conducted this study with high attention to **open and reproducible science** practices. The first study is published with open access, and the second is so far available as a preprint. Hypotheses, aims, methods, and analyses for the second study were [pre-registered](#) to facilitate transparency. Also, online repositories with reproducible analysis script and, where possible, data are available for both the [first](#) and [second](#) study.

In both projects, I had the predominant role in the conception of the study, design, development of methods, data collection and analysis, discussion of the results and manuscript write-up.

2. Focus on a broader picture in a theoretical analysis

Matyjek, M.*, Meliss, S.*, Dziobek, I., Murayama, K. (2020), A Multidimensional View on Social and Non- social Rewards. *Frontiers in Psychiatry*, 11, 818. doi.org/10.3389/fpsyt.2020.00818.

In this theoretical perspective, which was inspired by the work in the two studies described above, we aimed to raise awareness of the potential confounds in interpretation of the reported differences between social and non-social rewards if their multidimensionality is neglected. For this project, we conducted a thorough **literature review** with an original focus: neglected multidimensionality of rewards. Thanks to this, we could propose **a novel theoretical framework** for future research which would aid improvement of study designs and interpretation of mixed results in the existing literature.

With this project, I demonstrated the skill of **synthetic thinking** with a broader perspective, which is crucial for generating research questions for future work. Additionally, this was an **international collaboration** (Humboldt-Universität zu Berlin, Germany and Reading University, UK) which gave me the chance to gain new perspectives, network, and train in finding compromises in projects with multiple authors and institutions. I will surely benefit from all those skills in my further academic career.

In this project, I shared the first authorship with S. M. and we were equally contributing to the predominant role for the conception, theoretical analysis, literature review, and manuscript write-up.