

Autism spectrum disorders (ASD) are characterised by deficiencies in social communication and interactions along with rigid, stereotypic patterns of behaviour. Since autism was first introduced in the 1940s by Leo Kanner, countless number of studies have been conducted to explain what he described as “autistic aloneness” – specific pattern of social functioning in individuals with ASD. Nevertheless, there are still major inconsistencies concerning the nature, mechanism and specific aspects of social difficulties in ASD. Nowadays, the development of the field of studies on social cognition – the processes that enable us to understand and interact with other people, gives us a unique opportunity to better understand and evaluate social deficits in ASD. Additionally, the development of brain imaging techniques may help us to assess mechanisms underlying social impairments in ASD. It has been shown, for instance, that individuals with ASD may have problems with understanding mental states and behaviour of other people, which strongly interferes with their everyday functioning. Those deficits are accompanied by altered activation of critical hubs in so called “social brain”.

To shed more light on the described disturbances, this project will combine behavioural and brain imaging methods. On a behavioural level, we will compare performance of ASD individuals with typically developing (TD) control group on different tasks requiring social information processing, with varying levels of difficulty and complexity. Specifically, the participants will be asked to infer basic and complex social information from point-light displayed human motion. In addition, tasks requiring understanding of other people’s beliefs and thoughts will be introduced. During the neuroimaging part, participants will complete social cognitive tasks while their brain activity will be monitored with functional magnetic resonance imaging (fMRI), which will allow us to understand neural mechanisms underlying altered social functioning.

Described project is meant to provide thorough comprehension of weakened social functioning of people with ASD. Acquired data will allow us to explore SC impairments and assets, as well as their mechanism and their relation to ASD symptomatology. In consequence it may contribute to much needed novel therapy methods, that could lessen the burden of social impairments and improve quality of life of people with ASD.