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Phenotypes and mechanisms: Probing autism in and outside the lab

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ABSTRACT

Autism Spectrum Conditions are behaviourally defined, which highlights the need to focus on understanding the behavioural phenotype. Many autistic people experience challenges in social-communicative behaviour. A theoretical account suggests that atypical response to social rewards plays a causal role in such challenges. In our lab, we developed and tested different paradigms to create new ways to quantify the response to social rewards in autism, and reveal new insights into its underpinning mechanisms. This research, like the majority of autism research worldwide, takes place within Europe and the USA. To move beyond these artificial boundaries in another strand of our research, we studied the autistic phenotype in >11000 Indian schoolchildren. This set of studies not only allowed us to build an autism research toolkit in India, but also provided critical insights into the impact of socio-linguistic factors on the manifestation of autism. The final strand of our ongoing research connects the research within and outside the laboratory through the development of a mobile app to help with digital phenotyping of autism-related features in the general population. The aim of this app is for non-specialists to be able to identify autism in low-resource settings through scalable phenotypic assessments that tap performance in multiple behavioural domains.