

Who am I playing with? Exploring a New Model of Social Categorisation in Mentalisation

Lorenzo Cappiello

Kings College London, London, London, United Kingdom

Caroline Catmur

King's College London, London, United Kingdom

Salim Hashmi

King's College London, London, United Kingdom

Geoff Bird

University College London, London, London, United Kingdom

Abstract

When interpreting others' actions, humans often rely on beliefs about personality traits or "personality types" to predict mental states and behavior (mentalization). However, individual differences in these intuitive inferences are often overlooked and unmodeled. To address this, we developed a controlled paradigm using Minecraft to investigate how participants' beliefs about player types and personality dimensions influence their judgments of others' player types. A multinomial regression revealed that the interaction between participants' ratings of targets on two personality dimensions significantly predicted player type classifications. We tested three competing Finite Mixture Models, each incorporating participants' elicited beliefs as probability distributions. The models were evaluated using standard metrics, including Leave-One-Out Cross-Validation, BIC, Cross-Entropy, Adjusted Rand Index, RMSE, and correlation, based on their fit and predictive accuracy on unseen data. This novel approach provides a structured way to assess the extent to which participants' reported beliefs explain variability in mentalization performance.