

Interaction and Experience in Enactive Intelligence and Humanoid Robotics

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We overview how sensorimotor experience can be operationalized for interaction scenarios in which humanoid robots acquire skills and linguistic behaviours via enacting a “form-of-life” in interaction games (following Wittgenstein) with humans. Enactive cognitive architectures (following insights of Varela, Thompson and Rosch, which we survey) support social learning and robot ontogeny by harnessing information theoretic methods and raw, uninterpreted sensorimotor experience to scaffold the acquisition of behaviours. The success criterion here is validation by the robot engaging in ongoing human-robot interaction with naive participants who, over the course of iterated interactions, shape the robot’s behavioural and linguistic development. Engagement in such interaction exhibiting aspects of purposeful, habitual recurring structure evidences the developed capability of the humanoid to enact language and interaction games as a successful participant.