
Predictive processing of action intentions

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Abstract

Predictive processing theories assume that inferring another's action intentions requires a forward model of that agent's action, which can be obtained through learning by simulation. Based on this notion, we run a series of studies on goalkeepers in soccer and handball, who try to infer the intended direction of a penalty being kicked or thrown at them. We've run behavioral training studies, an fmri-mvpa study, and currently an eeg-mvpa study to grasp the mechanisms underlying the ability to predict (i.e., inverse model the sensory consequences of) penalty's. Results suggest that goalkeepers do engage in motor imagery to infer action intentions of penalty kickers/throwers, and use the ensuing predictions to make successful saves.

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