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Eye-tracking as a Measure of Table Tennis Expert-Novice Differences in Theory of Mind

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Abstract

Theory of Mind (ToM) refers to the ability of individuals to understand beliefs, desires, and emotions of others. Our study is based on the expert-novice paradigm and aims to investigate the operations of ToM of table tennis novices and experts by the patterns of eye movement. Stimuli integrated cognitive and affective ToM dimensions analogical to the table tennis situations and recorded response by eye-tracking technique. Reaction time, accuracy and eye movement data were analysis indexes. Study results revealed that experts could predict the shot actions and emotional states of opponents more quickly and accurately than novices, also there were differences in eye trajectory traces. The findings clearly show that eye-tracking technique can be used to illustrate table tennis expert-novice differences in ToM and provide suggestions for the development of table tennis training programs in use of eye tracker facilities.