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Perceiving context: the key to anticipation in sport

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The expert advantage in anticipation is made up of a superior ability to: a) extract and process kinematic cues from an opponent’s postural orientation and; b) effectively utilise contextual information which is situation dependent. While the former has been thoroughly explored (Mann et al., 2007), the influence of contextual information on anticipation has only received minimal attention. We discuss findings from published reports suggesting the importance of contextual information during anticipation in racket sports. We then explore the findings of two experiments in which high- and low-skilled tennis players were presented with normal videos and animations of rallies occluded at the opponent’s racket-ball contact. Animations, which were generated from player movement and ball trajectory data, omitted player kinematics so that participants had to base their anticipation judgments on contextual information alone. Both high- and low-skilled participants were able to anticipate at levels significantly greater than chance in both normal video and animated conditions, with the high-skilled participants being more accurate in both display conditions (Exp 1). These findings are in support of Dittrich’s (1999) Interactive Encoding model. Moreover, when anticipating based on contextual information alone, verbal report data indicated that high-skilled participants made more evaluation and prediction statements than less-skilled participants (Exp 2), implying the use of more complex domain-specific memory representations to make anticipation judgments. Findings are consistent with Ericsson and Kintsch’s (1995) Long Term Working Memory theory. Ongoing research will also be discussed. Finally, we suggest implications for the application of this research to the testing and training of perceptual-cognitive expertise, particularly in dynamic sports in which extreme time constraints are common.